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No. 1

AMERICAN CULTURE AND THE NORTHWEST COAST

By A. L. KROEBER

COMPONENTS OF AMERICAN CULTURE

PRE-COLUMBIAN American culture is theoretically separable into four groups of ingredients. The first includes elements of civilization brought by the first immigrants to the hemisphere. The second component consists of culture elements developed on American soil, each in most cases presumably at only one spot, but carried widely beyond this. The third comprises traits or aspects of culture also American in origin but remaining local in their diffusion, limited to tribes, culture-areas, or a few contiguous culture-areas. The fourth consists of elements that may have been introduced from the eastern hemisphere into the western during the course of development of the generic and local American cultures.

(1) *Original common American culture traits.* These elements are recognizable by two criteria. First, they must be of hemispheric distribution: not necessarily universal or contiguous, since they may have failed to be of utility in some environments and have been discarded, or again have been superseded by later growths developed on American soil. In general, however, traits of the present class must occur in both North and South America. Second, they must be of a simplicity or "primitiveness" that justifies their being attributed to the comparatively remote time when America was first settled. As to this time, Boas and Wissler¹ can be followed: it was approximately the close of the

¹ Boas, *The History of the American Race*, N. Y. Acad. Sci., *Annals*, xxi, 177-183, 1912; Wissler, *The American Indian*, 1917. It is perhaps scarcely necessary to acknowledge these works as providing the starting point of the present study. Wissler refers in his hypothesis to barely-developed stone polishing, which may have come earlier in Asia than in Europe; the dog; and the bow; as well as several admittedly

Palaeolithic. Perhaps the early pre-agricultural Neolithic would be a safer period to assume on account of the universality in America of the dog and the bow. If the absolute chronology of the stone ages of Asia corresponds to that of Europe, the first peopling and culturing of America then took place some ten thousand years ago. This lapse seems sufficient and not excessive for the racial, linguistic, and cultural diversification to have taken place which the historic American natives show.

It is well, however, to bear in mind that this introduction of population and culture in all likelihood did not happen at one historic moment only. Far more probably it went on for some thousands of years. In this way the coexistence, in this basic stratum of American culture, of the Palaeolithic harpoon and Neolithic bow would be accounted for. We are justified in speaking of a date such as 8000 B.C. only in the sense of its being the initial or perhaps the central point of the period of influx.

The elements of this fundamental stratum comprise the fire-drill; the harpoon, and probably the spear-thrower; the self bow with stoneheaded arrow; the simpler forms of handmade textiles, such as woven and perhaps twined baskets, mats, and wiers; possibly the mortar and the undressed metate for grinding; not unlikely some form of rattle, and, of wind instruments, the whistle and end-blown flute; and a certain stock of religion. This last included magic resting on the usual sympathetic and imitative concepts; shamanistic—that is, individualistic—control of spirits and disease; fear of the dead; a taboo on personal names; and crisis rites for individuals, especially for girls at adolescence, with perhaps whipping or other manhood tests for boys at puberty. The geographical distribution of masks in America suggests their inclusion in this stratum, although their frequent association with complex ritualism causes one to hesitate. Socially, this culture level seems to have been without exogamous sibs, unilateral descent, or totems in the narrower sense. Organization remained

Palaeolithic traits. Boas suggests the peopling as having occurred before "one of the last ice ages," which then separated the American immigrants from Old World contacts until after the retiring of the ice cap, whereupon the Americans flowed back and occupied parts of Siberia. The first entrants into America had the art of fire-making, breaking and cutting tools, and the dog; bow and lance are doubtful.

on the basis of blood-relationship and actual association in local groups.

(2) *Elements developed in America and widely spread beyond their point of origin.* This group of traits is easily the bulkiest of the several classes with which we are dealing. In it must be included the basic types of agriculture, both the primary maize-beans-squash form and the more localized adaptation in which manioc is dominant; with irrigation, fertilizing, the planter, weed-cutter, and hoe, and the dressed metate. It is hardly necessary to comment on the fundamental importance of this complex in producing stability and increase of population, with ensuing tendencies toward specialization of occupation and more intricate organization of society and religion and a broadened community sense. Closely allied to agriculture are pottery; tobacco; cotton growing, thread-spinning, cloth and the loom, very likely the half-loom for hung warps of rolled bast; and metals—certainly whenever smelted or cast, possibly when used raw. The shield should be added; the club with knobbed head or spike; quite possibly the blowgun, the stone ax, and the bark canoe. Masonry and pyramidal structures for religious purposes are surely to be included in this stratum. The man's house or sweat-house may be earlier.

On the side of society and religion, the following seem to demand inclusion in the group: the exogamous sib and totem, both patrilinear and matrilinear; villages or towns with a sense of solidarity; recognized chiefs or officials, whether hereditary or elected; confederacies; all real government, whether theocratic, autocratic, representative, or hegemonic; priests or religious officials as distinct from shamans; altars and perhaps shrines and regulated offerings; communal societies with their center of gravity resting in membership rather than in adult status; and religious bodies of more limited scope.

This mass of culture may be assumed to have originated largely in what will henceforth be designated as Cultural Middle America—the belt of highland and coast stretching from central Mexico to the Bolivian plateau. Civilization in this tract was so immeasurably more advanced than in the remainder of the hemis-

phere that such an inference is in the main inescapable. Higher cultures do borrow from lower ones, it is true: we have taken maize and tobacco from the Indian. But they borrow isolated elements; the stream is out from them. In addition, there are no prehistoric vestiges of advanced civilization ever having flourished outside Middle America, to make us pause; and the domesticated plants and animals whose history can be approximately traced—maize, cotton, potatoes, cocoa, tobacco, the llama and turkey—all lead back to the same area or its immediate peripheries.

In every aspect of culture, too, comparison of stages of development with distribution points the same way. Bronze, for instance, is best developed in Bolivia and southern Peru; alloying extends to Colombia and Mexico; the cold working of unsmelted copper, into Canada. In weaving, the heddle shed is certain only for Peru, probable for Mexico, problematical as an aboriginal device for the southwestern United States. The complete loom, weaving spun thread into true cloth, with square textile dress based upon it, extends from northern Chile to the Pueblos. Beyond, as Wissler has shown, the open frame with suspended bast cords is used over an irregular belt in North America—from southern Alaska to Florida. Still farther out, only hand woven baskets and mats are made. Pottery is polychrome from the Calchaqui to the Pueblos. In both South and North America there follows a scattering fringe of monochrome ware; then an area, as on the North Atlantic seaboard, of decorated but unpainted ware; and finally, in the extremes of both continents, absence of pottery. The architecture of Middle America is in stone—without broken joints—and its most wide-spread concept is the pyramidal platform. The masonry, used for dwellings, has penetrated north and south to the southwestern United States and northwestern Argentine; the pyramid, executed in earth, to the Gulf states and ancient Ohio valley.

So uniform is this slope from the cultural peak in the middle, so regularly are the lower phases of an art or of a set of institutions pushed out toward the continental peripheries before the higher phases that follow from the focus, that it is difficult to refrain

from inferring that the same process has occurred even in cases where direct evidence is lacking.

Thus some degree of probability may be posited for the former existence of an exogamous totemic sib system in Middle America. The reasoning runs thus. North of Mexico it is clear that in the main the most backward tribes are sibless; those of higher levels possess patrilinear sibs; the most advanced, including the distinctly agricultural ones, have matrilinear clans. Moreover, except for a group of peoples on the Northwest Coast, the matrilinear tribes live in a nearly continuous belt stretching from the Southwest through the Southeast, that is, in the part of the continent most exposed to Middle America. Further, one of the two determined areas of sib institutions in South America—and matrilinear at that—lies in Guiana at the end of the Antillean chain across which other culture traits may have traveled between the two continents. Everything accordingly points to an extension of the matrilinear clan system to include Mexico and other parts of Middle America. Yet it is lacking there, or represented by institutions like the Aztec *calpulli* that might quite conceivably be made-over clans but would be difficult to demonstrate as such. Is there an equivalent but higher phase of organization which would tend to supersede clan organization as bronze superseded copper, polychrome pottery replaced incised ware, the heddled loom crowded out the suspended warp frame? Apparently yes: the more intensive organization of Mexico and Peru, with its problems shifted from the social to the economic and political side, from marriage and descent of individuals to government of masses. Since no exogamous clan system has anywhere in history survived unimpaired into a great and highly integrated political society, it is hardly conceivable, if the Aztecs and Incas had ever possessed clans like those of the Pueblos and Muskogean, that they would have retained them as functioning parts of their cities and empires. This of course does not prove that they at one time had clans; but it leaves the possibility of reconstructing their former existence.

Further, the matrilinear tribes of the United States show in addition to their clans certain germs of political organization of a

kind which it is difficult to imagine the Mexicans and Peruvians to have escaped as the initial stages of their later political achievements. Such are the priest government of the Pueblos, the intra-tribal village relations and star associations of the Pawnee, the Natchez aristocracy, the Muskhógean confederacies, the league of the Iroquois. Final confirmation or disproof must emerge from careful analysis of the Middle American data; but, until this is forthcoming, the hypothesis here outlined seems empirically plausible as well as the simplest.

However, let it stand only as a sample. On the side of religion similar cases can be made out for several elements: the use of *Datura*, the altar, fraternities, for instance.

(3) *Elements of local American origin and remaining locally restricted.* These constitute in the main the superstructures built by tribes and groups of tribes on their common American inheritance. Their enumeration would be endless. A few examples in illustration will suffice.

Mexico: numerical, astronomical, and calendrical achievements, including zero sign; glyph writing; corbelled arch; concrete; sculpture.

Colombia: bronze-gold alloy and plating by sweating.

Peru: roads, centralized government; domestication of llama, and wool textiles; bronze.

Tropical Forest: manioc; hammock; long tembeta labret.

Southwest: storied masonry dwellings; kachina gods.

Plains: sun-dance; age-societies; perhaps tipi.

Southeast: representative confederacies; hominy.

(4) *Elements imported into America since the dawn of history in the old World.* The number of these that like rod armor, the composite bow, and the Magic Flight tale, are reasonably demonstrable as imported, is quite small. Many more traits have been suggested as diffused into America but remain contested. Some of these will be considered below. There is need for proceeding very conservatively in the expansion of this class. Alluring arguments can sometimes be advanced in favor of genetic connection between more or less parallel traits of the Old and New World: the Middle American balsa and Oceanic outrigger canoe as developments from the raft, for instance.² The weakness of such

²W. Schmidt, *Zeitschrift für Ethnologie*, XLV, 1098, 1913.

contentions, even where the resemblance seems real, lies in their leaving unconnected too much of the totality of the supposedly connected cultures. No domesticated plant or animal (except the dog) was transported from one hemisphere to the other before Columbus; nor, except on wild imagining, the metallurgical or ceramic arts; and the wheel, the screw, the plow, are lacking in America. With no diffusion in these fundamentals, evidence must be unusually complete before one can put faith in the diffusion of isolated items, especially when their occurrence is in parts of America remote from Asia.

THE NORTHWEST COAST

In the foregoing segregation of American civilization, the Northwest or North Pacific Coast has scarcely been mentioned. Yet it is not an area that is backward like the caribou tundra or the barren guanaco plains, too remote to have received higher elements of culture or too impoverished environmentally to accept them. The Pacific Coast of Canada is mild climatically, advantageously indented, forested, well provided with food, in fact was more densely populated than most other tracts north of Mexico. It lies no farther from Palenque and Tenochtitlan than does the Middle Atlantic region. Still, it is much less closely related in arts and institutions. Agriculture, pottery, the confederacy idea, the pyramid mound, the shield, are common to Mexico and the eastern woodland, lacking on the Northwest Coast. Instead there appear an intricate economic system, a peculiar art, an outstanding development of wood working. Evidently we are confronted here by a culture which differs from those of the Southwest and Plains not as these differ from the Southeast or Mackenzie but by another order. It is the thesis of the following pages to demonstrate that essentially Northwest Coast culture shares with American culture only basic universal elements presumably derived from Asia; that it lacks regularly the generic American elements that were developed on American soil and became diffused; and that what is specific in it is either a direct outgrowth on the spot from the relatively undifferentiated

primitive American culture or the result of later Old World influences.

THE PRIMITIVE STRATUM

The primitive stock of culture brought by the American race into the hemisphere is expectable, and occurs, unimpaired, in the Northwest. All the elements previously listed as characteristic of this stratum survive in the area. The one early art which has become lost is that of stone chipping. It is likely that grinding replaced this under the influence of controlling processes of wood working, much in the way that in Europe grinding techniques came to be applied to stone in the Neolithic after they had been evolved on bone and horn toward the end of the Palaeolithic.

ABSENCE OF GENERIC AMERICAN CULTURE TRAITS

Of the elements named above as probably originating mainly in Middle America and constituting the bulk of American cultures generally, the majority are either foreign to the Northwest or of such different quality as to warrant doubt of their common origin.

Wholly lacking are the entire agricultural cluster of traits; pottery; masonry; the pyramid mound and temple or ritual structure; the altar; the priest as a community official; the communal religious society; the confederacy; the moccasin, sandal, and breechclout; the shield.

The following are either weakly represented in the Northwest, or stand in seeming rather than intrinsic parallel to the remainder of America:

Tobacco is little used in the Northwest, especially where the culture attained its peak. The characteristic consumption is by eating instead of smoking.

The sweat-house or men's house has importance only at the extreme south of the area. Elsewhere it is rare and suggests late and hesitatingly accepted intrusions, or possibly a lingering survival from former greater significance. The history of the sweat-house is far from clear; but it is widely diffused and characteristic in North America, and seems at least fairly ancient.

The ball headed club appears to be mainly replaced in the Northwest by an edged, sword-like one.

True axes with the blade in the plane of the handle are not Northwestern. Wedges and adzes are used instead.

Dugout boats seem originally to have been river craft in the Northwest and to have been made seagoing later. Bark canoes would therefore have been serviceable; and their non-use appears more likely to be the result of a cultural pattern than of floral necessity, since the tribes in the Northwestern hinterland find bark for their canoes. Geographical discontinuity points to independent origination of the wooden boat in the Northwest and in the Southeast and South America.

Offerings or sacrifices seem to be a less definite part of religion in the Northwest than in the remainder of America, at least among groups of approximately equal cultural level. Prayers too are spoken much less.

Finally, the Northwest is substantially without officials, chiefs, government, or political authority. This may seem a strange statement about a culture in which a class of chiefs or nobles is recognized as distinct from commoners. Yet the very breadth of this class of chiefs argues that it is something different, in the main, from a group of officials constituting part of a political mechanism. The concept of such a mechanism is what seems to be foreign to the Northwestern culture. It knows privileges and honors, but not office; a status of influence, but no constituted authority. This is clearest at the southern end of the area, among the Yurok and Hupa, where the spectacular developments of crest, name, seat, potlatch competition, visible insignia, are lacking, and the fundamentals of society therefore emerge nakedly. What counts among these people is possession; possession of property, of inherited or acquired use, of privilege, of ritual. Enough of such possessions, jealously maintained, give honor and influence and command. Custom law operates to guard and increase the possessions, prestige, and power of the wealthy. It gives them no office because there are no offices. A rich man is often more influential in fact, even at a distance from his dwelling, than among other Indians a chief would be in his own village.

But he represents his kinsmen, his personal and family friends, his beneficiaries and hangers on, just as a poorer man may represent only his own children. Neither is constituted by community action or sanction.

From this social foundation, politically so anarchical, it appears that the elaborate pseudo-political organization of groups like the Kwakiutl and Haida is derivable without much change in the spirit or direction of the institutions. One could not similarly derive the political status of the Iroquois, Creek, Omaha, Paiute, Zuñi, or Aztec. That is, the Northwest area, and it alone, is without even the germs of political organization.

SUPERFICIAL AMERICAN PARALLELS

There remain a number of traits in which the Northwest apparently equates with other areas, but whose distribution or internal evidence points to a separate origin. A typical case is the calendar.

The Mexican calendar is based on a day-count. North of Mexico nothing more refined than a moon-count within the year is attempted. Over most of the continent the moons are seasonally described—deer-rutting, leaves fall, cold, and so on—without attempt to correct the natural imperfection of twelve and a fraction lunations falling within the year. In two areas only,³ the Southwest and Northwest, is an effort made to hold the reckoning true by starting a new count from each winter solstice. The Southwest may easily have acquired this first slight endeavor toward astronomical justification of time reckoning as an echo from Mexico. But if such a hint had traveled farther, to the Northwest, it should have left some traces in the intervening Californian and Plateau regions, and presumably would have penetrated also to areas of tolerable advancement like the Southern Plains and Southeast, which however do not relate the solstices with the moon-count. The distribution thus suggests an independent origin for the Northwest.

³ Besides part of the Eskimo habitat, in which meteorological conditions are unusual. Leona Cope, *Calendars of the Indians North of Mexico*, Univ. Calif. Publ. Am. Arch. Ethn., xvi, 119-176, 1919.

Analysis confirms. The Southwestern system is really bi-solstitial, sometimes repeating the descriptive names of the winter months most inappropriately in the second intersolstitial period of the year. The Northwest uses only the winter solstice, numbering the moons from one to twelve or thirteen instead of naming them. The plans are intrinsically dissimilar. Further, the Northwestern one can be related to the Northwestern propensity to value, rate, and deal in figures, as an economically minded people can hardly avoid doing.

Analogous arguments, which it would take too long to set forth in full, can be advanced in favor of the local origination of the following Northwestern traits:

Use of copper. Plates of the metal are carriers of fictitious credit values. The source of supply is distinctive.

Spinning and Weaving. Wissler has reviewed the salient comparative data, and Kissell made precise some of the Northwestern peculiarities.⁴

Religious societies. Beckwith, in a comparison of Northwestern societies with those of the Southwest, has shown their profound difference.⁵ The Northwestern societies pattern after shamanism, adhering to the fundamental concept that admission is by individual supernatural experience. The Southwestern societies are under priests that become sacred by virtue of their office; and even where their purpose remains curative, their membership is filled by entrance into relation with ritual authority, not by dream or trance.

Age-grading in religious organization, of which a trace occurs among the Kwakiutl, seems unconnected with that of the northern Plains tribes.

Cannibalism in ritual.

The ceremonial fool. Boas has shown that his character in the Northwest has strong war associations. This may be true also of the ritual fools of the northern Plains. It does not hold of the fools or buffoons of the Southwest and California.

⁴ Wissler, *The American Indian*, ch. III; Mary Lois Kissell, *A New Type of Spinning in North America*, *Am. Anthr.*, n.s., XVIII, 264-270, 1916.

⁵ Martha W. Beckwith, *Dance Forms of the Moqui and Kwakiutl Indians*, *Fifteenth International Congress of Americanists*, Quebec, II, 79-114, 1907.

The sib system. The basis of the Northwestern social scheme seems the marking of the inheritance of some badge or distinction. In the Southwest and Atlantic drainage regions, the basis is the division of the community into equivalent units, whose functions may be political, religious, or purely social. The Northwest as usual thinks of the individual line of descent and ownership of something; the Southwest and Southeast of the integration and balancing of the body politic. It may well be that a single sib movement spread far enough to reach the Northwest and was then secondarily though deeply made over to fit the prevalent cultural patterns there. But it is also conceivable that the origin of the whole Northwest Coast sib organization lies in the visible and namable signalization of possessed and therefore heritable prestiges, and that clans, moieties, exogamy, and totemism are only the secondary by-products of such tendencies. Which of these views is correct, only intensive study can hope to disclose. If the second alternative seem far fetched, there may be said in its behalf that it has apparently not been seriously considered in general works devoted to social institutions, and so would naturally impress as strange. But it appears as entertainable; and if substantiated it would explain admirably the facts of distribution and the peculiarities of the Northwest sib system, and leave only its "normalities" to be accounted for. The immediate problem of course is whether these normalities or the peculiarities outweigh in the Northwest; which is a question perhaps impossible of solution today because we are still accustomed to think of native social phenomena in categories chiefly of exogamy, unilaterality of descent, totemism, without much consideration whether these be fundamental and primary or superficial and secondary in each case of occurrence. At any rate there appears enough of a case to forbid outright equating or genetic affiliating of the Northwest Coast and other American sib organizations.

ELEMENTS OF LOCAL ORIGIN

We come now to culture traits peculiar to the Northwest Coast, or at most extending beyond it to a few adjacent tribes. Two

distributions of arts recently worked out by Waterman⁶ and Wissler⁷ seem significant in this connection and will serve as an introduction to this part of the discussion. They are the plank house and a group of ornamental twining techniques, whose areas coincide almost exactly and are both surrounded by a much larger belt, extending from the Southwest into Asia, in which an equivalent element holds sway.

In the case of dwellings, the competitor of the plank house is the earth covered or semi-subterranean house, which has been traced with tolerable continuity as far east as Europe. It extends over most of the unfrozen portions of the northwestern part of North America except the Northwest Coast area proper. Here it is replaced by a true frame structure, mainly of split planks, often large, and built skilfully without saws, nails, or pegs. This frame house is without parallel in the western hemisphere. The eastern woodland bark house is scarcely even an approximation, its slabs not being structural but laid on a framework of poles. In the Northwest there is a timbered frame, no system of poles, and the planking is integral to the structure. The resemblance of the two types is therefore in appearance rather than mechanics or idea.

Now the distribution immediately suggests that the earth covered house came in from Asia, flowed down the coast and plateau of America as far as the borders of Mexico, and subsequently was replaced in the Northwest Coast area by the locally developed plank house. This interpretation is in accord with the plank house involving a higher degree of industrial constructive skill than the earth lodge; as well as with the unusual development of wood working of all sorts in the Northwest area. An alternative interpretation, that the earth lodge came into the area later but failed to shake the strongly established plank customs of the coastal tribes, is theoretically conceivable but seems less likely; and at any rate accepts the specific isolation of the coast area without diminution.

⁶ T. T. Waterman and collaborators, *Native Houses of Western North America*, Indian Notes and Monographs, 1921.

⁷ Wissler, *The American Indian* (1917), map fig. 17, p. 53.

Wissler's map of coiled basketry shows an area also beginning in Asia. (Its extension there remains to be determined, and leaves a conspicuous gap in present ethnological knowledge.) The trait proceeds into Alaska, down the mountain and plateau backbone of the continent into northernmost Mexico, and spills somewhat into the Plains. (There is a second area of coiling in Fuegia, Chile, Argentina and Peru, presenting an interesting and perhaps difficult problem that need not be considered here.) Again there is the marked-off Northwest Coast strip; very narrow, but uninterrupted from the Tlingit to the Wailaki, without any coiling. Wissler designates the area as one of twining; but the distinctive factor seems to be the use of special elements in the method of ornamenting the twining; overlay in California, wrapped twining in Washington, false embroidery in Alaska. These techniques are so local, both when considered separately and as a group, as to prevent their interpretation as an ancient set of inventions in comparison with the far stretched coiling process. Again one is thrown back upon the conclusion that the Northwestern trait originated on the spot and probably fairly late.

Here then are two specific indications of an active cultural focal center lying within the Northwest area and rather rigorously limited to it. There follows an impressive series of other elements, some of them of cultural weight and well known. These include first the so-called caste stratification of Northwestern society, the extensive development of slavery as a property institution, the prestige attaching to wealth, the potlatch and credit system—a formidable and distinctive economic complex. Second, there is the outstanding art and the almost obsessional use of wood—for cooking vessels for instance. Next, there are several special elements, such as consistent bare-footedness and the sail, if the latter was really aboriginal; besides such features as the edged club and other local equivalents for generic American traits that have already been mentioned. Then, it is only within the Northwest area proper and its immediate sphere of influences that the ritual or pattern number is five. Lastly, though here one can as yet speak but diffidently, the trend of other aesthetic activities than the plastic arts is rather unique on the North Pacific Coast.

In the remainder of North America, for instance, rhetorical and poetical figures strive after the effect of quality, of preciousness in particular; in the Northwest, they seek the effect of size, of surpassing quantity. And as regards songs, the passage from any central Californian tribe to a northwest Californian one, in other words across the southern periphery of the Northwest Coast area, brings one into a quite different world of music, with new rhythms, scales, tonal range, embroideries, and affects. These are only hints or impressions, to be sure; they cannot be more until painstaking and competent comparisons have been made.

INFERENCES

To sum up, the Northwest Coast area proper, the strip between the ocean and the first range of mountains, lacks many of the fundamentals of the generic American civilization which is continuously and intergradingly distributed, with differences either manifestly secondary or of degree rather than kind, from Canada to Patagonia. Where the Northwest seems to show elements resembling those of the generic American culture, these generally tend to analyze out so as to suggest a rather diverse character and therefore distinct origin. And lastly there are specific traits and deep-going groups of Northwestern traits which are without genuine parallel elsewhere in the hemisphere. In general it might be said that the Northwest Coast lacked the agriculture-pottery, the social-political, and the ritualistic culture clusters of the remainder of America and had developed two quite unique complexes of its own—those of wood working and plastic art, and of property and social ranking.

In short, it is doubtful whether Northwest culture has had much serious genetic connection with the remainder of American culture, other than in the presumptive common primitive Asiatic-American culture basis, and for certain secondary and minor inter-reactions. If we picture American civilization graphically in terms of a north-south section of its accumulated mass, the dominant feature is the high plateau of Middle America. From near the two ends of this plateau rise the pinnacles of Mexican and Peruvian civilization. Beyond, on each side, stretches a

descending series of terraces, or peneplain. Only near the extreme of one of these descents there rises a sharp peak, the Northwest, not to the height of the central massif, but approximately to the horizon of the first level below it, that of the Southwest; to which however it is nonconformable, their strata and constituents being of different origin.⁸

Surrounding the Northwest Coast lie a series of low-grade, neutrally colored cultures—those of the California-Great Basin, Plateau, and parts of the Mackenzie-Yukon and Eskimo areas—which evince some infection from the Northwest, a paucity of specific self-developments, and a diluted relationship to Middle America. They are cultural hinterlands, both toward the Northwest and, at several degrees removed, toward Mexico. It is evident that their low cultural intensity has been one condition of the rise of the Coast culture. Pressed against active neighboring cultures, the Northwest culture could scarcely have grown up with so great a measure of independence as it evinces.

Of these neighboring cultures, that of the Plateau—the interior drainages of the Columbia and Fraser—is undoubtedly most nearly related to the Coast culture. The relationship would seem to be in part one of secondary influencing; but also in part ancient and close. To a considerable extent the Plateau culture of today appears to reproduce the former basis of the Coast culture, which has evolved while the interior has more nearly stood still. The “Salmon food-area” of Wissler seems thus to be the parent of both the Coast and Plateau culture-areas; the maritime culture of the Kwakiutl and Tlingit to be a made-over river culture.

The archaeological evidences available corroborate. They show the former culture of the coast about the mouth of the Fraser to diverge from the present culture there in the direction

⁸ This conclusion carries farther a view advanced in a discussion of “The Tribes of the Pacific Coast of North America,” in *Proceedings of the Nineteenth International Congress of Americanists*, Washington, 385–410, 1917, in which the culture of the Pacific Coast generally was contrasted with that of the remainder of North America. That essay was descriptive; the present one is genetic in aim.

of an approximation to the culture that persists up the Fraser.⁹ This relation may indicate a former Salishan flow down-stream; but it also suggests the specialization of what we know as the typical Coast culture, out of a soil like that of the recent culture of the interior Salish. One is tempted to go farther and see in the modern Nutka, Comox, and Kwakiutl culture a somewhat older stratum than in that of the Haida, Tsimshian, and Heiltsuk; to infer a shifting of the active focal point of the area northward from the Vancouver Island region to that of the Queen Charlotte Islands within a comparatively recent period. This would be in line with the demonstrations of Boas and Swanton as to the history of Northwestern ceremonies and matrilineal reckoning.

ASIATIC RELATIONS

The question inevitably arises whether the aloofness of Northwest culture from the current of generic American culture indicates its substantial origin in Asia, as its geographical position might suggest. On the whole it may be said that the evidence of specific culture traits is against Asiatic origins, that of underlying trends more favorable. Traits that are widely spread in Asia are here referred to, not local peculiarities of northeastern Siberia, which may well be due to a reflex current of culture out of America.

As regards specific traits, it is interesting that there are a number common to considerable areas in Asia and the tracts surrounding the Northwest but wanting in the Northwest proper. Such are coiled basketry and the semi-subterranean house already discussed, for which the Northwest has its particular equivalents. Of similar import are a number of traits distributed over considerable areas of northern North America, which may conceivably be of Asiatic origin and have in some cases been so interpreted. These include tailored clothing; the boot; the toboggan as an equivalent of the wooden snowshoe; the net snowshoe; the sled; the oil lamp; the underhung canoe; the skin boat; the skin tent on pole framework; birch-bark vessels; Alaskan pottery; the skin

⁹ Harlan I. Smith, "Shellheaps of the Lower Fraser River," *Mem. Am. Mus. Nat. Hist.*, iv, no. 3.

hand drum or tambourine as a shaman's implement; transvestite customs.¹⁰ With the partial exception of the net snowshoe, the tambourine drum, and perhaps berdachism, none of these elements seems to have obtained a serious foothold in the Northwest area proper.

Of specific traits common to the Northwest Coast and Asia, armor is the outstanding one to rise to mind. The sinew-backed bow, assuming it to be a modification of the Asiatic composite bow, extends into the Plains and Southwest, but is uncharacteristic of most of the Northwest Coast. The cedar-bark beater or shredder of the Coast carries a suggestion of the Polynesian tapa beater. But as neither form nor purpose is identical, a case of partial convergence seems likely. The same interpretation appears probable for the resemblance of form between the pear-shaped wedge maul of northwestern California and the taro pounder of Hawaii. The edged club of the Northwest Coast has approximate Polynesian parallels; but the limited number of shapes which a club can assume renders inference dubious. Melanesia and Peru would also call for linking on the score of clubs, if historic connection were thought of in such cases.

The Northwest Coast spindle is more suggestive. In the center of the area, the whorl is large enough for a flywheel, and the spindle is held upward; whereas the whorl of Mexico and Peru seems almost as much a button with the primary function of keeping the thread on the hand-twirled rod that is rested in a bowl, as it is a flywheel. As Wissler and Kissell have shown,¹¹ much of the spinning and weaving technique of the Northwest Coast is anomalous; a more searching comparative analysis is needed before we can be sure whether this textile art is of independent local origin, sprung from remote Middle American stimuli, or introduced from Asia. The latter possibility, however, seems to merit consideration.

The wearing of hats, as contrasted with head-ornaments, is Asiatic but un-American except in a region centering in the

¹⁰ For several of these items, I am indebted to the suggestion of Dr. R. H. Lowie.

¹¹ Cf. note 4, ante.

Northwest Coast, and therefore probably significant of connection.

There may also be meaning in the fact that what is perhaps the most notable generic trend of Northwest Coast culture, its economic outlook and energy, finds definitely closer parallels in the eastern hemisphere than anywhere in America. Reference is to social values rather than to particular institutions such as the potlatch, whose specific form is obviously determined locally. Elsewhere in America a man's rating depends on his bravery, or generosity, or demonstration of relation with the supernatural world, or ritual office, or descent. Actually, of course, possession of property does tell. But the face of social consciousness seems resolutely set against the recognition of wealth as a primary factor making toward esteem and influence; and on the whole social consciousness is astonishingly successful. This is about equally true in the Arctic, the Woodland, the Plains, the Southwest, Mexico, and South America. Where societies grow large and complex, wealth may accompany lineage and office; but, ideally at least, as an incident. Distinction and power continue to inhere in the lineage or office.

The Old World is economically more realistic. In Melanesia, in primitive and advanced Indonesia, among the reindeer breeding Siberians, property possession of itself gives power and admitted prestige. It is only the higher civilizations, such as China, Japan, India, that have been able to develop and maintain an aristocracy solidly enough established to base its claims on learning or lineage or caste and to affect to despise wealth while preserving or acquiring it.

It is therefore not surprising that remarkable parallels sometimes crop out between the social systems of the Northwest Coast and peoples of the Old World. The Yurok of the northernmost California coast and the Ifugao of Luzon, for instance, are alike in owning many kinds of valuables, being exact in their property valuations, according power almost wholly in proportion to wealth, following precise legal systems of similar type, and yet remaining without political system or concept of a state. To think of the resemblances of the institutions of these two peoples as due to

specific historic contact would be absurd. The resemblances however become intelligible as products, on a comparable cultural level, of similar social trends or attitudes as regards wealth. This attitude may conceivably have been transmitted from Asia to the Northwest Coast.

All in all it would be premature to deny outright the possibility that the Northwest Coast culture has a more directly Asiatic basis than any other in the New World. Yet the case for an essentially Asiatic origin of this culture remains rather weaker than might be anticipated from the combined circumstances of geographical proximity to Asia and historic separateness from most of America. The cited indications of Asiatic influences which have penetrated adjoining parts of the New World but have passed by or glanced off the Northwest Coast are significant in this connection. In short, the outstanding characteristic of Northwest Coast culture is its seeming comparative aloofness from both Asia and America. How far this apparent isolation may yet resolve into remote and subtle genetic relations in either or both directions, or confirm into a history of unusually independent development, is for future study to unfold.

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THE PALAEO-LITHIC PERIOD IN SIBERIA: CONTRIBUTIONS TO THE PREHISTORY OF THE YENISEI REGION¹

By GERO VON MERHART

INTRODUCTION

FOR the first information concerning Siberian discoveries of palaeolithic artifacts associated with fossil animal remains in loess, we are indebted to I. T. Savenkov. He collected a considerable quantity of stone implements, several bone implements, and numerous complete and fragmentary bones at the foot of Afontova mountain on the southwest border of the municipality of Krasnoyarsk. According to M. Tscherskij, the bones include the following: *Elephas primigenius*, *Rhinoceros tichorhinus*, *Bos primigenius*, *Bos priscus*, *Equus caballus*, *Rangifer tarandus*, *Cervidae* (*alces?* *euryceros?* *canadensis?*), and *Canis spec.* The greater part of the stone implements are chipped on one side only and are comparable with the Mousterian forms of western Europe, including even typical points and side scrapers. Only a few of the implements are chipped on both sides after the Chellean and more especially the Acheulian fashion. The relic-bearing horizon lies near the base of a loess deposit, which, in turn, rests on sands and is covered by loam and humus. A rubble deposit underlies the whole sequence complex.

This important discovery was first noted briefly in the transactions of the East Siberian Section of the Russian Geographical Society;² later in a somewhat more detailed paper by Savenkov before a local meeting (1891) of medical men;³ and finally in an

¹ Translated from the original by George Grant MacCurdy and published here for the first time in any language.

² I. T. Savenkov: "Contributions to the archaeology of the middle course of the Yenisei," Proceedings of the East Siberian Section of the Russian Geographical Society, xvii, 3-4, 1886.

³ I. T. Savenkov: "On the palaeolithic epoch in the vicinity of Krasnoyarsk in the Yenisei Government," Appendix to the minutes of the Society of Physicians of the Government of Yenisei, Krasnoyarsk, 1892.

almost verbatim French abstract by Savenkov before the International Congress of Prehistoric Anthropology and Archaeology in Moscow.⁴ Little notice was taken of this important paper except by Baron de Baye, who, after his return to France, reported Savenkov's discovery at a meeting of the Academy of Sciences.⁵ In 1896, De Baye visited the Yenisei region and verified Savenkov's discovery on the spot. His report which followed, together with the preceding citations, gives a sufficiently clear presentation of what was known about the Afontova site.⁶

Judging from the presence of bone implements, both Savenkov and De Baye concluded that Afontova should be attributed to the late palaeolithic, particularly to the Magdalenian epoch, an observation which was later lost sight of. The implements in question are spear points (up to 20.0 cm. in length, and from 1.5 to 2.0 cm. in breadth—the former worked thinner, the latter thicker, up to 1.0 cm.), oval in cross section with sharp, incised grooves (deep or shallow) mostly on the narrow side only. The base is flattened either on one side or on both for purposes of hafting. We shall make further reference to these bone points.

Further than this there are no reports⁷ in the literature concerning this site, which in certain general works is ascribed to the early palaeolithic.⁸ That Afontova is not an isolated site was

⁴ I. T. Savenkov: "Sur les restes de l'époque paléolithique dans les environs de Krasnoiarsk (Gouv. de Jenisseisk, Sibérie)," Congr. intern. d'anthr. et d'arch. préhs., Moscou, 1892, tome I.

⁵ Baron de Baye: "Rapport sur les découvertes faites par M. Savenkov dans la Sibérie orientale," Séance du 27 février 1893, Paris, 1894.

⁶ Baron de Baye et Th. Volkov: "Le gisement paléolithique d'Aphontova-Gora près de Krasnoiarsk (Russie d'Asie)," *L'Anthropologie*, tome X, p. 172, Paris, 1899. (Contains, besides the first-cited work of De Baye, the only pictures of stone implements from Afontova.)

⁷ Savenkov: "On the culture remains left by man contemporary with the mammoth, along the shores of the Yenisei," Minutes of the joint meeting of the Warsaw Society of Naturalists, VII, 1896-97.

⁸ G. et A. de Mortillet: *Le Préhistorique*, 2d édit., 594, 624.

Obermaier: *Der Mensch der Vorzeit*, 174. (It is curious that the mention of Savenkov as the first discoverer of the palaeolithic in northern Asia, fully brought out by Obermaier in the original, and correctly so, has been omitted in the Russian translation of this work. In justice to D. M. Anutschin, author of the preface of the Russian edition, as well as L. I. Sternberg, author of Savenkov's necrology in the Contributions of the Museum for Anthropology and Ethnography of the Academy of Sciences, III,

already mentioned by De Baye, who found both stone implements and fossil animal remains in loess deposits at Ladeiki on the right bank of the Yenisei, 12 kilometers east of Afontova, and in Perevosnaja, midway between these two points and likewise on the right bank (*Le gisement*, etc., p. 8). So far as the author knows, no determination of the animal bones is recorded in the literature. The industry was thought to be the same as that found at Afontova. Moreover, in a later work on the Stone Age in the Minussinsk region, Savenkov mentions two stone implements from Bateni and Isych mountain.⁹ The first was classed as a discoidal cleaver, the second as a side scraper of the early palaeolithic type. The circumstances of the discovery of these two specimens are not all that could be desired, but Savenkov believed that he saw in them evidence of the presence of palaeolithic man in the Minussinsk region.

This is all that the literature reveals concerning the palaeolithic period in the Yenisei region. Savenkov, who gave his collection to the Petrograd Academy of Sciences, later did some further excavating at Afontova. A summary of his investigations has not appeared, although it is thought to have been in manuscript form at the time of his death.¹⁰

NEW DISCOVERIES

In the archaeological section of the Museum of the Yenisei region in Krasnoyarsk, the author found several series of palaeolithic objects which fortunately supplement our knowledge of the palaeolithic period in the Yenisei region. They come from several well-known points, including Afontova,¹¹ Peresselentscheskij

1916, it must be admitted that the blame for this unfortunate oversight rests with the translator.)

Gorodkov: *Prehistoric Archaeology*, Moscow, 1908. (Gorodkov spoke very cautiously. He expressed a belief that the station belonged to an early stage of the late palaeolithic and was not convinced of the association of industrial remains with remains of mammoth fauna.)

⁹ I. T. Savenkov: "The Palaeolithic Age in the Minussinsk Region," *Materials for the Archaeology of the Eastern Governments of Russia*, part II, Moscow, 1897.

¹⁰ I. T. Savenkov died a true soldier of science, a few days after the completion of his last excavation at Afontova, which was partially directed from his sick bed in a tent.

¹¹ Collection of G. P. Sosnovski, A. I. Tugarinov, A. N. Sobolev.

Point (Perevosnaja),¹² Ladeiki,¹³ and Bateni;¹⁴ also from Woennyi village,¹⁵ and Kirpitschnye Sarai (brick barns)¹⁶ which are new. With the exception of Bateni, all the sites mentioned lie within the vicinity of Krasnoyarsk. Besides, as a representative of the Krasnoyarsk Museum, the author carried on a series of excavations during the summer of 1920, which acquainted him with the foregoing sites and led to the location of new ones.¹⁷ The new stations are Busunova, Lepjoschkina, and Ajoschka, in each of which culture remains were found in situ; Kokorewa and Tes on the Tuba, in which it may be said that the presence of palaeolithic horizons is highly probable. Although the region covered was great, the summer period very short, and much time consumed in reconnaissance, especially of the later prehistoric sites, the results were sufficient to justify a publication of the new stations, which supplement the old and in addition afford the first undoubted evidence bearing on the palaeolithic period in the southern part of the Yenisei government.

THE GEOLOGY OF THE SITE

Savenkov gives the following section for Afontova, beginning at the top: Humus; rich yellowish-brown loess loam (exploited); whitish loam; gradual transition to a sandy layer containing mineral salts (worthless for brick-making); sandy, silty layer; layers of sand; gravel; rubble. The loess contains *Pupa*, *Helix*, and *Succinea* and is obviously of aeolian origin. De Baye declared the loess to be fluvatile, but without any evidence in support thereof. According to him the section is as follows: (Humus); loess, in which thin layers of fine sand almost conformable with the declivity are intercalated at irregular intervals; rubble. Both investigators are agreed in this, that the relic-bearing deposit which Savenkov placed at the base of the loess-

¹² Collection of S. M. Sergejev, A. N. Sobolev.

¹³ Collection of A. P. Jermolaev.

¹⁴ Ibid.

¹⁵ Found by A. P. Jermolaev and A. I. Tugarinov.

¹⁶ Found by G. P. Sosnovski.

¹⁷ G. P. Sosnovski, assistant at the Museum, took part in these excursions.

loam, and De Baye at the base of a loess complex, is not conformable with the slope of the declivity.

At present it is difficult, since the exploitation has been discontinued, to obtain a well-defined section. In addition, railroad embankments and modern dumps have increased the difficulty of gaining access to the mountain, so that excavations on a large scale only can give definite results. The extent of the relic-bearing deposit, or better still the distribution of the lenticular culture deposits, is wide spread—more than 2 km. are to be taken into account—so that the study of single small sections for the reconstruction of the stratigraphy, especially of the relic-bearing deposits, does not seem to suffice. Rubble and gravel are nowhere at present laid bare, but they are recognizable as underlying deposits by a continuation of the section as far as the bank of the Yenisei. The deepest underlying deposit within a limited radius of exploration is formed of fine sands, at places with the intercalation of thinner layers of fine gravels. With very gradual transition there follow from the bottom up, first sandy, then loamy loess of a yellowish-brown color, 1.5 to 5.0 m. thick, characterized by typical fossils, a tendency toward perpendicular crumbling, and porosity. Black humus forms the last of the series of deposits. Thus it may be seen that Savenkov's section is essentially correct in so far as the culture deposits in the deeper portion of the true loess are concerned.

To be sure the culture horizon rises in places almost to the humus, but the subsequent natural denudation of the loess complex must account for this phenomenon since the distance to the underlying sands remains approximately the same. Moreover, the original deposition is undoubtedly disturbed in places, especially at the south end of the palaeolithic station, that is, near the Yenisei where sands are shifted between loess deposits, and pockets and lenticular formations of gravel, sharply defined against the underlying loess, bear testimony to periodic and temporary flooding by water—the whole complex apparently having been shifted from its earlier position. As was noted by De Baye, the floodings which resulted in the predominant gravel bedding parallel to the slope might have been caused by occa-

sional excesses of surface water on the mountain. No stratigraphic significance can be attached to these lenticular gravel deposits so far as can be observed. The nature of the disturbance of the entire complex could not be determined, but it is certain that sands, gravel, and loess in the southern portion sometimes dip into the mountain, often at such an angle that an original deposit in this position seems out of the question (Fig. 1).

The relic-bearing horizon is readily recognizable in many places by its grayish-black color and the presence of charcoal and stone and bone implements. It is never more than a few centimeters in thickness. In other places it is suggested only

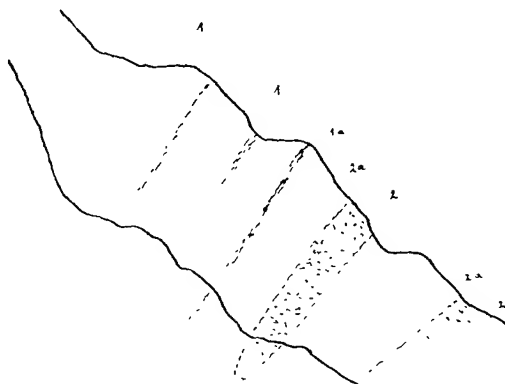


FIG. 1.—Afontova mountain, southeast slope. 1, loess with various narrow bands indicating culture remains; 1a, darker culture stains, 15 cm.; 2, fine sterile sand, lenticular masses, 27-0 cm.; 2a, sandy loess with scattering culture remains above, 40 cm., below, 55 cm.

through the soft brownish color of the lighter loess, and in the disturbed portions practically all trace of industrial remains have been obliterated. Nevertheless Afontova is, at the present time, one of the best points for the stratigraphic study of the palaeolithic period in the Yenisei region.

Peresselentscheskij Point.—Just to the west of the group of buildings situated on the first terrace of the right bank of the Yenisei, and directly on the highway which leads from here to the ferry (for Krasnoyarsk), the following section is visible: Beginning at the top, dune sand (varying in thickness); dark, relic-bearing level of the Iron Age, fading out below (ca. 60 cm.); gradual transition to fine sand (ca. 4.0 m.); clearly defined

transition from sandy loess to yellow loess (*Succinea*) (ca. 1.0 m.); rubble (3.0 to 4.0 m.) to normal water level. The culture remains lie in the pure loess, near the rubble (Fig. 2).

Near *Ladeiki* lenticular deposits of loess, limited in extent and lying directly on the rubble, are visible not only at the west end of the parish, but also to the southeast in the big valley which is traversed by the way to the churchyard. Dune sands, so far as they are present, form the underlying deposit. The only signs of a culture level were retouched chips, nuclei, etc., in and near the surface of the loess.

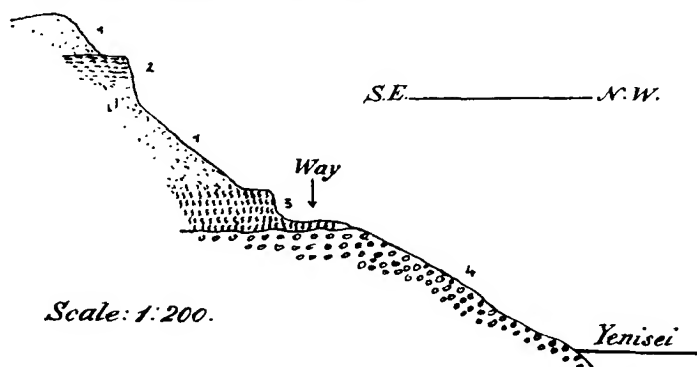


FIG. 2.—Section at Peresselentscheskij Point. 1, dune sand; 2, culture-bearing level of the Iron Age; 3, loess; 4, rubble.

In the village of *Woennyi* on the left bank of the river, almost directly opposite *Ladeiki*, the following complex of deposits is to be seen: Humus, camp site of the late iron age (ca. 0.5 m.); loess; sandy loess; sand (6-7 m.); transition layer of mixed sand and gravel; pure gravel and rubble (2 m.) unconformable; palaeozoic marl. The foot of the complex is covered by the rubble deposit of the river bed. Its erosion surface lies approximately 6-8 m. above the normal water level. The culture level, 4 m. below the surface, is practically nothing but a mere seam, recognizable by the presence of charcoal, heaps of broken bones, and various industrial remains (Fig. 3).

These sections are supplemented by the geology of *Gremia-tschi*, one of the tributaries of the Yenisei west of Afontova mountain, and of *Kirpitschnye Sarai* (brick barns) northeast of Afontova. The deep ravine cut in the old terrace of the southeast slope

of the Gremiatschi mountain, approximately northwest-southeast, that is to say at right angles to the prevailing winds, is completely filled by a thick layer of loess in its upper part, in which the brook has cut a deep, new gorge. Sosnovski found here some undoubted industrial rejects, although no distinct culture deposits. The second site forms, properly speaking, only the northern continuation of Afontova and is recognizable at the

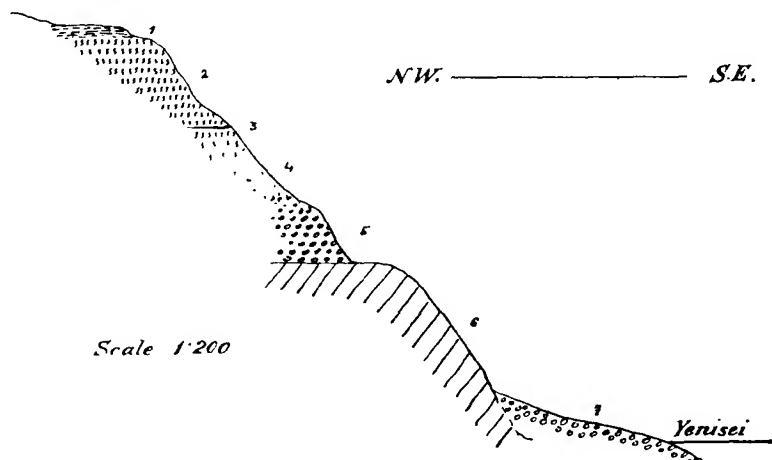


FIG. 3.—Section east of Woennyi village. 1, culture-bearing level of the late Iron Age; 2, loess; 3, palaeolithic relic-bearing level; 4, sand; 5, ancient rubble; 6, palaeozoic marl, 7, recent rubble.

foot of the slope which drops to the Katscha valley, by thick loess deposits under the surface layer. The underlying deposit is not visible. A thin, often interrupted culture level, or, more properly speaking, a series of stains and charcoal fragments, yielded a typical industry and reject material.

If one takes into consideration the position of the sites and their sections as a whole, it is easily seen that the loess thins out the farther it is from the westerly mountain slopes or the adjacent river banks. The logical explanation of this would be that strong dust storms in the prevailing west-east or south-west-northeast direction deposited their load of material in the lee of the slopes facing the east, whereby there resulted the complete filling up of the Gremiatschi ravine, the comparatively thick accumulation by Afontova mountain, Kirpitschnye

Sarai, and Woennyi village; with this is linked up an equally thick deposit of loess on the west slope of the Katscha valley, north of the mouth of the Bugatsch. Peresselentscheskij Point and Ladeiki, the deeper-lying sites of the right bank, are spurs of this wind-cone deposit of *débris*. By the reducing action of the lee, and accordingly, increased transport power of the wind, there resulted only relatively insignificant loess deposits which, moreover, were decreased later through deflation, and finally persisted only where the moving sand dunes of a later geologic phase protected them (Figs. 4 and 5).

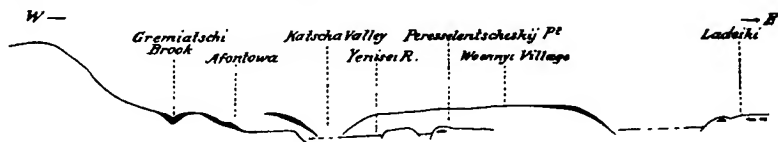


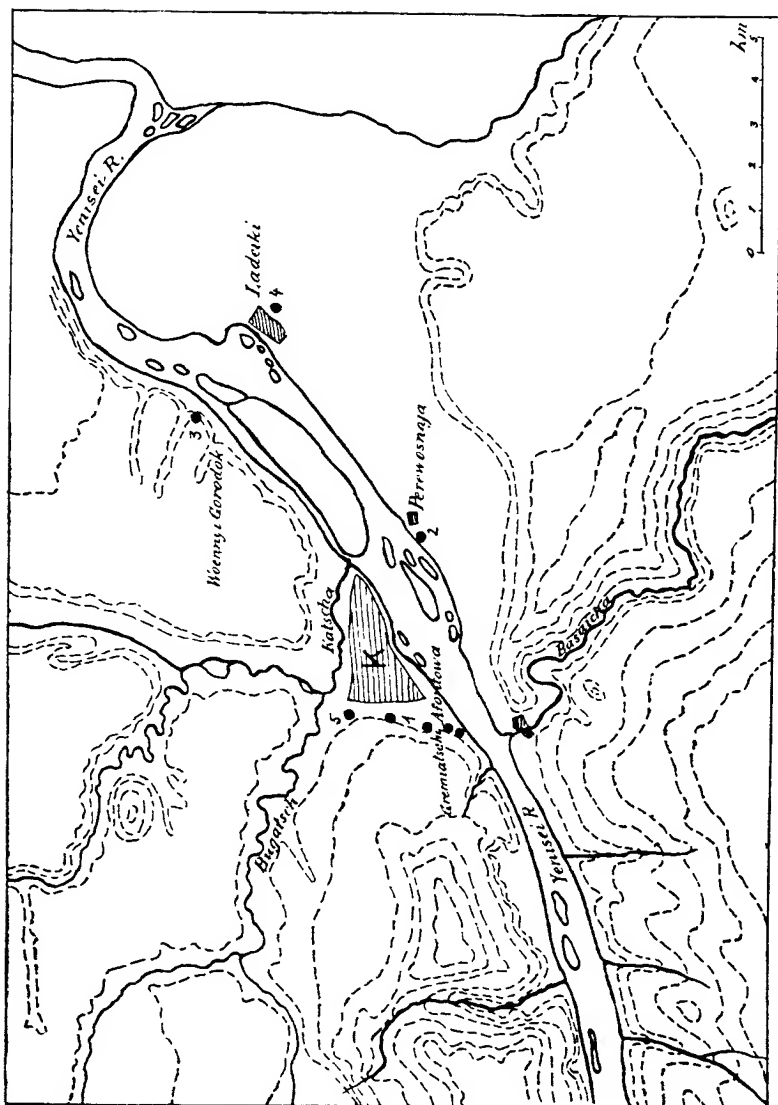
FIG. 4.—A schematic composite of sections of the Yenisei valley near Krasnoyarsk. The loess deposits are in shading.

Kokorewa lies on the left bank of the river, about 225 km. above Krasnoyarsk.¹⁸ At the northeastern end of the place, the steep bank of the Yenisei presents the following section: Village dump material; red loam (presumably weathered material from the nearby sand and marl slate; loess (with *Succinea*, *Pupa*, and *Helix*); sand; rubble. The entire height of the terrace amounts to about 8 m. The base of the loess lies some 5 m. above water level. A few decimeters above the base of the loess one can see dark stains with broken bones. At one place there was a loose breccia several centimeters thick and more than a meter long, composed of broken and burned bones. No artifacts were found.

The same section occurs 10 km. to the south, at the village of *Ajoschka*, on the left bank of the Yenisei. Here were found, not only broken bones, but also rejects of stone industry and a retouched flake which lay somewhat nearer the upper limit of the pure loess, in a zone colored by red loam.

Leaving out of account for the moment the next stations up the river, Bateni and Lepjoschkina (265 km. from Krasnoyarsk), we come to the *Busunova* section, 350 km. from Kras-

¹⁸ The distances are given by the verst measures of the pilot map of the Yenisei channel.



noyarsk on the right bank (Fig. 6). This section is north of Kosakenstaniza in the first deep ravine, near its opening into the river. It shows the following stratigraphic sequence, beginning at the top: Dune sand (1.0 m.); relic-bearing level of the iron age in dune sand (1.0 m.); structureless fine gray sand (2.0 m.); yellow loess (no shells found) with veins of rust, scattered bits of charcoal, bones, and stone chips (3.0 m.); sandy loess with two only slightly developed relic-bearing horizons (1.0 m.); stratified sands (4.0 m.); rubble.

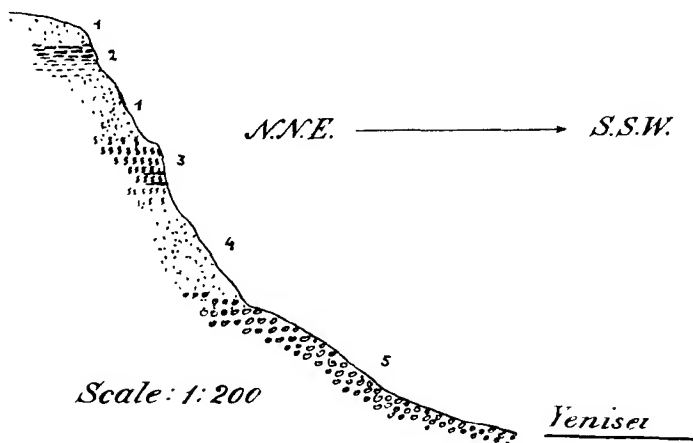


FIG. 6 —Section near Busunova. 1, dune sand; 2, relic-bearing level of the Iron Age; 3, loess; 4, fluvial sands; 5, rubble.

Tes on the Tuba, 50 km. above the point where the Tuba empties into the Yenisei, is built on the youngest terrace of the river. South of the village, beginning at the foot of the Georgi mountain, the border of an old terrace runs in an easterly direction approximately parallel with the river. Outside of the eastern hedge, a sand pit reveals the following section, beginning at the top: Dune sand with intercalated dark horizon representing a former surface level (2 m.); relic-bearing horizon of the Iron Age in like sand (1 m.); gray, structureless sand (2 m.); loess (with *Succinea*, *Pupa*, and *Helix*) with flecks of rust and tubular concretions (ca. 0.15 m.); cross-bedded yellow sands observable to a depth of 2 m. (with *Succinea* and flat-shelled snails). The underlying deposit does not outcrop, but, judging from the

structure of the deeper terrace, presumably consists for the most part of rubble. Nearby, east of the foot of Georgi mountain, the loess deposit outcrops in like position under the dune sand. No palaeolithic remains were found, but material preserved in the Minussinsk Museum, and a splendid specimen in the Museum of the Academy of Science in Petrograd (282⁸⁶) indicate that this was a palaeolithic site. According to the report of Savenkov, quoted by G. Handelsmann, this site must have been in the last-named western part of the dunes, and is either exhausted or covered by the threshing floors of the village.

The geological discovery in *Bateni* is less clear on these four points. Here also the dune sands trail in considerable thickness from the village toward north-northwest, concurrent with the declivity. The slope, very short and steep by the village, is in places elevated above the terrace level by the superimposed dunes. On top, over wider stretches, it is destroyed and flattened by wind erosion and disappears in wind pots with small hummocks and continues with little fall to the river level. Beginning at the top, the section when complete is as follows: Blown sand (including a dark layer ca. 0.4 m. thick, with Iron-Age remains; reddish brown deposit consisting of sandy loam (0.03 m.); sand; gravel and rubble. At one place there occurred, directly above the reddish brown deposit, a well-defined dark layer in the sand containing fragments of charcoal (0.03 m.). It was no richer in culture remains, however, than its underlying deposits. The reddish yellow layer became so hard when exposed to the sun that one could scarcely break it between the hands.

The remains of a relatively abundant stone industry lie for the most part on the rubble uncovered by the wind, mixed with relics of the Iron-Age horizon. On account of a bright glistening patina the atypic stone rejects are easily distinguishable from the stone industry of the Iron Age. As far as could be observed the palaeolithic implements occur only below or directly above the reddish brown deposit, while the later culture remains are scattered over the entire clearing as far as the upper relic-bearing deposit. Therefore the sandy loam deposit appears to bear a relation to the palaeolithic station.

Lepjoshkina, or Malaja Irdsha, lies only a short distance above Bateni on the opposite side of the Yenisei, in the valley of the Osinovka brook. On the right side of the brook, a small rocky summit rises to the height of the hamlet, out of the slope that ascends to the Irdsha. East of this, at the upper end of a ravine, appears a dark stony deposit, possibly the weathered remains of a rocky bank. This deposit is covered by fine sands which trail upward on the slope looking to the southeast, and contain, near the surface, an Iron-Age camp site. At its lower margin, almost immediately over the stony deposit, there was found in an undisturbed condition a small Stone-Age workshop, the middle of which was marked by a hearth about a meter in diameter. Outside of the black hearth the relic-bearing layer is distinguishable only by very slight dark patches and by implements lying in one horizon. On account of the finding of a single nucleus, it is possible that the culture layer ascends with the slope and that in the corresponding level yet other hearths might come to light.

It is easy to compare Kokorewa, Ajoschka, and Busunova by means of their sections. Everywhere sands (variable in thickness) rest on the gravel and rubble in which the present river bed is cut; above, loess, which in the transition is mixed with the sands, nowhere reaching any considerable thickness; and finally, depending on local conditions, dune sands or decomposed material, near elevations. The same is true of Bateni if one regards the reddish brown deposit as altered loess which, upon closer investigation of the very extensive outcrop, may perhaps be revealed in greater thickness. Tes also, lying some distance from the Yenisei valley, corresponds in its section too distinctly to the stations of the latter not to be classed with them and the whole regarded as the result of a homogeneous and contemporaneous geologic process. The section of Peresselentscheskij Point likewise, even to the absence of sands between loess and rubble, is the equivalent throughout of Tes in position and composition, and connects the southern stations with those in the vicinity of Krasnoyarsk in the sense that the latter also are to be regarded as belonging to the same geologic period and attributed to the same climatic conditions.

The Quaternary of the Yenisei region and the transition to the present time still await their investigators. To place our sections in relation with a system of diluvial or, more properly speaking, post-diluvial phenomena, is therefore not yet possible and the effort to distinguish the geologic process which our sections indicate must undoubtedly bear a hypothetical stamp.

The loess is everywhere to be considered as an aeolian deposit. It includes the known shells, has undisturbed camp sites, lacks deposition in definite layers, belongs sometimes to the higher, sometimes to the lower river terrace, i.e., the only loess layer—for nowhere does one find two loess deposits in the same section—and is deposited according to the topography of the place, on the higher as well as on the lower terraces. There must have been therefore an extreme continental climate at the beginning of the geologic present, followed by the development of a steppe phase. The Yenisei was already at work on the building of the last terrace, and even if perhaps more turbulent, occupied approximately its present bed. In this phase there was at all events a considerable reduction in the river current. Confining itself to a very narrow channel, the Yenisei left a great part of its bed dry. In so far as the last accumulation had deposited sands on the surface, these were put into motion by the storms as the transition formation of sand loess between pure loess and river sand proves.

The deposition of loess continued in part at levels which today are covered by high water, at that time however not flooded, as the undisturbed camp sites testify. New loess covered hearths and other culture remains, and after the disappearance of the loess phase sand dunes overwhelmed the old land surface. With the advent of a more humid climate, the current of the Yenisei attained sufficient volume once more to invade and clear out the partly bare stream bed to such an extent that the present aspect was brought about by the cutting into the sections of loess deposits containing palaeolithic stations partly occurring high up on the steep bank, partly under the level of the last terrace. Doubtless the immeasurably greater volume of water in comparison to that of the steppe period, has reached and

carried away much palaeolithic material long after it was embedded in the deposit.

FAUNA

Tscherskij's fauna list includes the entire fauna of the loess of Afontova so far as it was known in 1885. A complete list of fauna containing all the species in the culture deposit and those found by Savenkov in his excavations is, as already mentioned, not known in the literature.

Savenkov's observation that the reindeer is predominant among the faunal remains has been verified by all subsequent prospectings. The deposit contains in places whole nests composed of broken and frequently burned reindeer bones. Cranial fragments are likewise comparatively abundant and belong, as do the other bones, to a large number of young individuals. Besides, more recently, *Cervus megaceros* and *Antilopa saiga* have been identified.¹⁹ Of the former a basal portion of an antler (26 cm. in circumference) with a piece of the skull attached is to be noted. The antler shaft and branches were broken off after having first been notched all around. *Bison priscus* and *Equus caballus* complete the number of those game animals which at present can be declared to have served as food for the loess dwellers of Afontova.

We shall next take up the question of two objects carved from ivory. Fragments of tusks have often been found; near Woennyi village there came to light in the relic-bearing layer the end of a tusk (70 cm. long) split lengthwise. The appearance of the mammoth in the foregoing list of fauna is not strange, so that it might appear rather presumptuous to pronounce the ivory as collected subfossil material instead of simply including *Elephas primigenius* in the list of fauna. That the Afontova loess contains mammoth as well as *Rhinoceros tichorhinus* was determined by Tscherskij, and there is not the slightest basis for assuming that the animal remains in the loess are derived from some other locality. This must be insisted upon all the more since the

¹⁹ The new material has been determined by Alexander M. Sobolev.

possibility of a displacement is not out of the question, as is indicated by the disturbed deposits.

Thus we come to the conclusion that Tscherskij's fauna list is essentially valid as a list of animals contemporaneous with man, so far as one is justified in assuming for all influences of the loess in principal a primary deposition and thus geologic contemporaneity; but, in addition, the relic-bearing deposit lies in a deeper part of the loess.

The hearth of Peresselentscheskij Point yielded four examples of *Rangifer tarandus*, and one example each of *Cervus capreolus* and *Bison priscus*. From the limited faunal material of the southern sites, *Bison priscus* was found at Lepjoschkina and *Bos spec. nov.* at Busunova. The latter form, according to a communication from A. Sobolev, is closely related to *Bos* of the present, but still retains certain traces of kinship with *Bos priscus*. Assuming the same age for all loess deposits as we sought to do in the remarks on the geology of the sites, we can thus specify the following animals as associated fauna of the palaeolithic period in the Yenisei valley:

Rangifer tarandus (identified by Tscherskij and Sobolev) abundant.
Equus caballus (Tsch. and Sob.) fairly plentiful.
Bison priscus (Tsch. and Sob.) fairly plentiful.
Bos primigenius (Tsch.) not so plentiful.
Bos spec. nov. (Sob.) at present known only in Gremiatschi and Busunova.
Cervus megaceros (Sob.) not so plentiful.
Antilopa saiga (Sob.) one example.
Elephas primigenius (Tsch. and Sob.) rare.
Rhinoceros tichorhinus (Tsch. and Sob.) rare.
Canis spec. (Tsch.)

Such a fauna corresponds very well in composition and quantitative participation of the individual representatives with a steppe phase, with probably here and there forest boundaries, and can for our region be declared late diluvial.

CULTURE REMAINS

The materials testifying to the presence of the loess dwellers are composed in part, as already stated, of undisturbed culture deposits and in part of surface finds, or specimens encountered in doubtful locations. A portion of the finds from Afontova

belong to a well-defined culture level which is 2-6 cm. in thickness, of distinct gray color, and marked by charcoal fragments scattered throughout the loess. Of a similar character, but more limited, is the relic-bearing horizon of Woennyi village. Near Peresselentscheskij Point, S. Sergejev excavated a hearth marked by burnt stones, and his material dug up in the neighborhood was taken from an undoubted undisturbed culture level, as was also the case of a small hearth at Lepjoschkina. In Busunova the best pieces were collected from the refuse, but the rejects made of the same stone found in the deposit permit the conclusion to be drawn with even greater certainty that the artifacts came from the culture deposit. For the artifacts from the southern part of Afontova as well as the sparse finds from Ajoschkina, one must concede that the deposit to which they belong, even if geologically well-determined, seems doubtful yet in detail. In Kirpitschnye Sarai the relic-bearing deposit is visible but very indistinct because disturbed. Only isolated specimens sticking in the loess could be recovered from Ladeiki. The circumstances surrounding the finds at Bateni were noted above.

We choose as a starting point the series gathered by Sergejev at Peresselentscheskij Point which affords a closed culture complex of easily observable position, and then pass to the description of the specimens illustrated.

Fig. 7, No. 1.—Crude cleaver formed from a river pebble of green jasper. The face represented by the principal surface of fracture is flatter than its opposite and is partially covered by the original pebble surface. The cutting edge forms a zigzag margin around three-fourths of the contour. The general shape and retouching combine to fit the implement for use in the left hand rather than the right. The edge is characterized by alternate reverse chipping, there being few stretches where the retouching is on both sides rather than on one side only.

No. 2.—Grayish-white quartz side scraper, the under face simply a single unretouched surface of fracture. The back is adapted to fit the right hand. The upper irregular face is in part covered by the original surface of the block from which the implement was made, and is carefully retouched to an edge

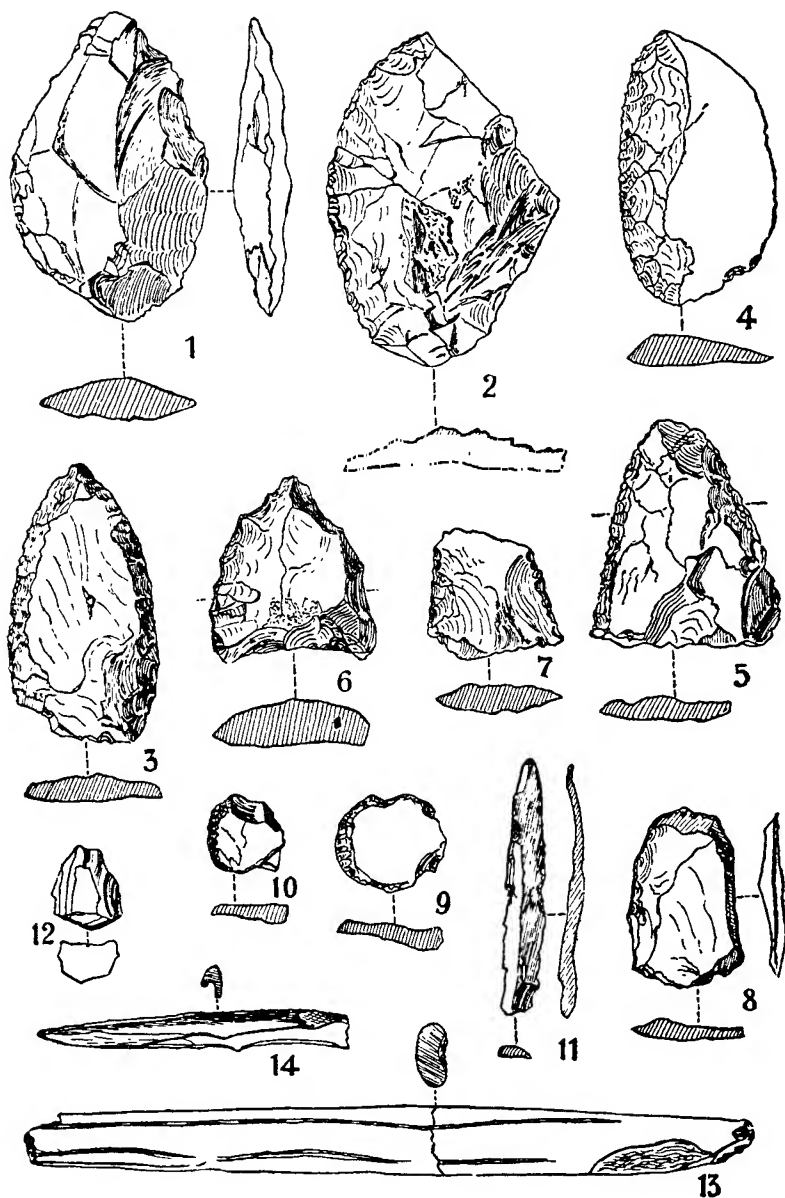


FIG. 7—Stone and bone implements from Peresselentscheskij Point. Nos. 1-12 are of stone; nos. 13 and 14 are of bone. About $\frac{1}{2}$.

gracefully curved in outline and running along one margin for the entire length of the specimen.

No. 3.—Pointed implement of stone similar to No. 2. The under face is formed by a single surface of fracture and is not retouched except for a single chip near the basal angle. The upper face is flattened by the removal of a few flakes only. The entire margin is retouched to a steep slope except for the base which is adapted to the hand by the removal of a few sharp corners. The tip of the point is broken.

No. 4.—Side scraper of dark green hornstone with under face formed by a single surface of fracture showing percussion rings. The unworked portion of the upper face consists of the original pebble surface. The well-directed primary and secondary chipping has produced a fine scraping or cutting edge along one side of the specimen for its entire length.

No. 5.—Roughly pointed implement of dark gray hornstone made from a flat flake. The under face is unworked—the upper face is roughly reduced. The two margins are retouched.

No. 6.—A roughly pointed triangular implement of stone similar to that employed in Nos. 2 and 3. The base is thick. The under face is an unworked surface of fracture. The retouching has not been successful, due in part to the mode of fracture of the material. The lightly retouched concave base indicates that this portion might have been used as a hollow scraper.

No. 7.—Implement of the same material as No. 6. A flake adapted for threefold use: the margin is retouched to form scraping edges; the blunt end is steeply retouched on one side (hidden) so that the implement may be used as a scratcher (end scraper).

No. 8.—A broad thin blade of the same material as No. 7. Marks of utilization are visible along the under face. The upper face is retouched along the margins and for part of the way so carefully as to form a cutting edge.

No. 9.—Implement of the same material as the foregoing. Both faces are formed by a single surface of fracture. Half of the surrounding margin is carefully retouched to form a sort of duckbill.

No. 10.—Scratcher of the same type and material as No. 9, only not so carefully worked.

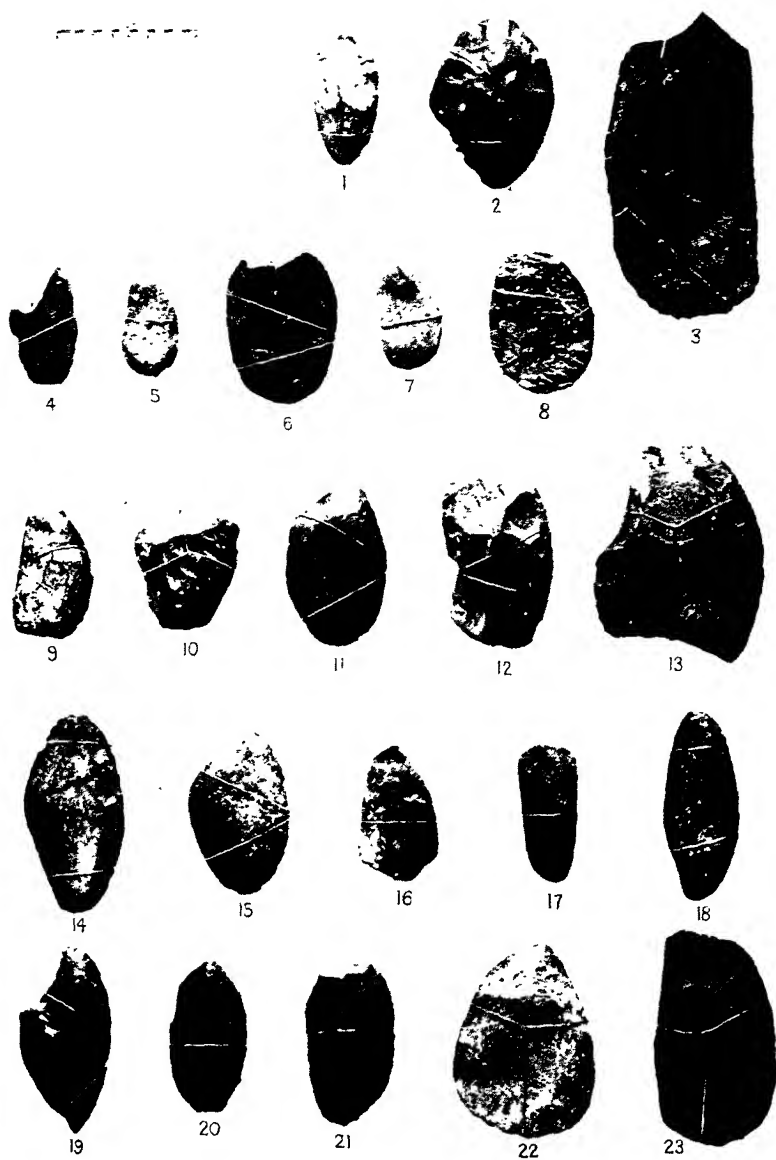
No. 11.—Pointed, blade-like flake with the back adapted to the left hand. The edge shows evidences of utilization.

No. 12.—A small nucleus of the same material as Nos. 2, 3, 6-10.

No. 13.—Fragment of a bone spear point made from a comparatively large bone split longitudinally. The margins are carefully smoothed by polishing, leaving an oval concavo-convex profile in section. From the broken point there run four artificial, longitudinal grooves. The two which are visible in the illustration are shallow.

No. 14.—Bone awl showing the marrow canal at the base. Traces of a cutting and scraping implement are visible at the point.

(In addition to the implements illustrated in Fig. 7, Von Merhart mentions some forty others, some complete and others fragmentary; also about three hundred and fifty rejects from a single culture horizon and from a single hearth comprising an area of only a few square meters. This series affords a very fine glimpse of the loess dwellers' inventory of tools and weapons.) With the exception of Nos. 1, 4, 5, and 11 all of the stone implements illustrated are of the same material, very probably derived from a single unworked lump of raw material. This stone, which in fracture stands next to quartz, was abundantly turned to the best account because of the apparently complete lack of flint in the Yenisei region. Especially scrapers and scratchers of the type shown in Nos. 9 and 10 which bear remarkably fine, steep retouches, then flat retouched scrapers, and finally blades—all these of small size—were manufactured here from suitable material, which also recurs among the rejects. Often formless splinters bear a few marks of intensive utilization, which indicates frequent, temporary use of stone chips. Without exception only the margin of the upper face was retouched in all the implements made of this stone, while the under face was formed by a single surface of fracture, often with a fine bulb of percussion. The same method of procedure is seen in the larger examples,



STONE IMPLEMENTS FROM AFONTOVA MOUNTAIN. ABOUT 1/2.

the coarse scraper (6), the typical scraper (2), and the point (3). Material and technique combine in such a way in a series of implements that, leaving stratigraphic relations out of account, one would be inclined without more ado to consider them as contemporaneous and belonging to the same culture level. The arched scrapers (2 and 4) are close variants of the same fundamental type. The former was made from the inner flake of a pebble; the latter, formed from the crust of a pebble, best represents the leading palaeolithic type of the Yenisei region and is moreover one of the types which permit of classing the Yenisei palaeolithic as a Mousterian age. To this inventory of points, scrapers, scratchers, and blades are to be added a small, fairly well-formed cleaver and a bone point. The latter, though only fragmentary, has been completely determined. Its discovery in this region is of the greatest importance.

When we consider that the series from Afontova mountain, in consequence of the partially confused stratigraphic relations, and the somewhat untrustworthy reports of older discoveries, have been arbitrarily interpreted, the bringing together of stone, bone, and ivory from Peresselentscheskij Point is not so strange. The entire series of scrapers, rich in variety (Pls. I, II), the broad blades, the narrow blades, the one-sided, small, conical nuclei for the finest blades, all that is in conformity with the evidence from Peresselentscheskij Point, to which are to be added the bone points and a baton.

Fig. 8.—Here are illustrations of three supplementary scrapers, two showing large surfaces of the pebbles from which they were made (2 jasper, 3 quartz), one not showing any of the original crust (1 jasper, with retouches of accommodation at the back), and a splendid double scraper of jasper (4), a wholly typical example. The quartzite blade (5), retouched everywhere except at the base, and with an angular point, is clearly related to the opalescent quartz blade with completely retouched margins (6). The chalcedony blade (7) bears only very slight retouches of accommodation and a few flat chips have been taken from the edge.

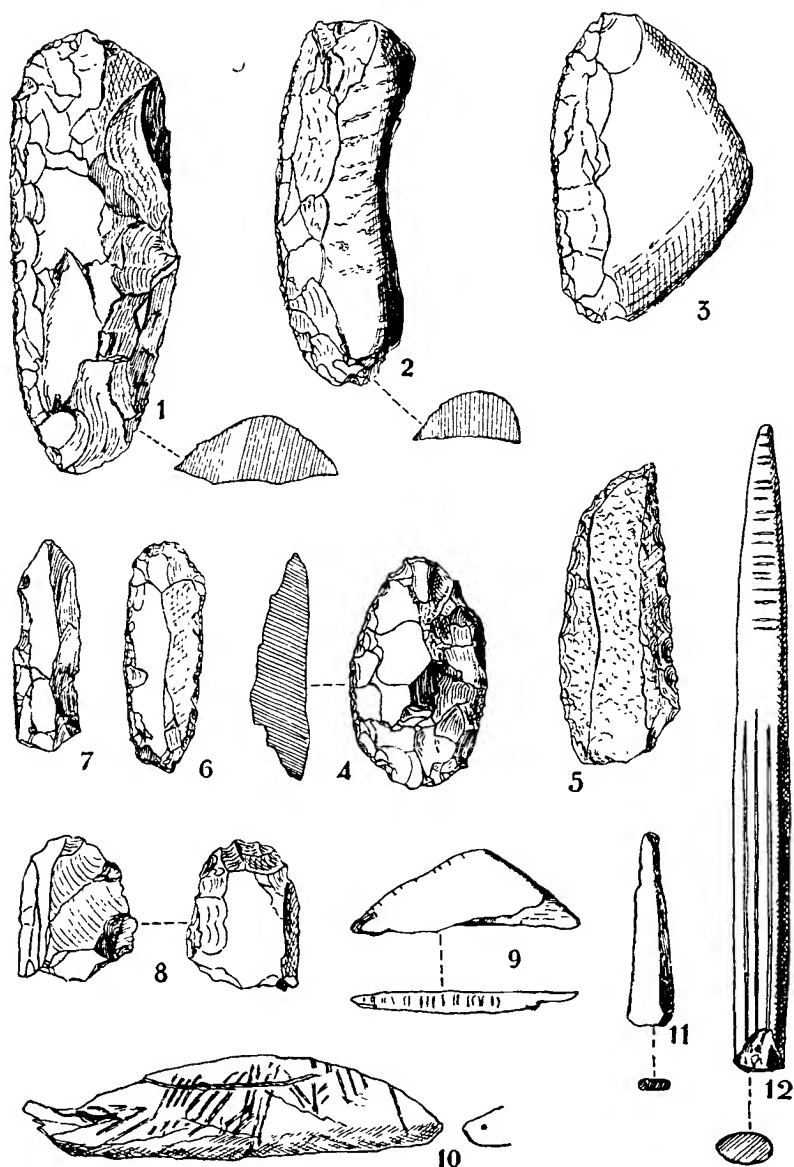


FIG. 8.—Industrial remains from Afontova mountain. Nos. 1-8, stone; 9-10, ivory; 11-12, bone. About $\frac{1}{2}$.



STONE IMPLEMENTS FROM AFONTOVA MOUNTAIN. ABOUT 15

Points and awls are not represented at Peresselentscheskij Point, whereas a number have been found at Afontova (Pl. II, and Fig. 9 from pen drawings to supplement the plate). There we find a coarse point (Pl. II, 14 and Fig. 9, a), awls (Pl. II, 10, 12 and Fig. 9, b and c), small curved points and the striking long narrow point (Pl. II, 9 and Fig. 9, e), from 12.7 cm. in

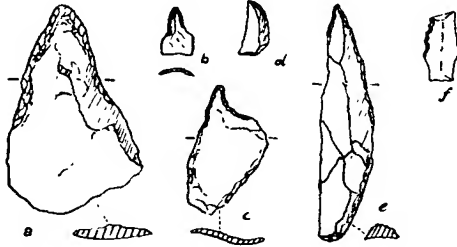


FIG. 9.—Stone implements from Afontova mountain. 14.

length. The latter comes from the same culture level and the same site as the typical scraper (Pl. II, 54), the nucleus employed as a hollow scraper (Pl. II, 43), the nuclei (Pl. II, 28, 29), the saw (Pl. II, 4 and Fig. 9, f), the retouched chip (Pl. II, 11), and the spear points (Pl. III, 19, 20, 21, 24, 26). This is added as a general inventory.

It might be well to mention here that at a second place, in a layer which certainly had not been disturbed, the following were found: Handsome scrapers chipped from gray, transparent quartz (Pl. II, 48, 55, 60), the small nuclei (Pl. II, 33-35), the point (Pl. II, 14), the awls (Pl. II, 10, 12), the blades (Pl. II, 5-7), the bone points (Fig. 13, Nos. 12, 15, 17), and the baton of reindeer horn (Fig. 13, No. 18). In such a manner is the homogeneity for this baton established, and the types therein represented unite this series with the culture of Peresselentscheskij Point. In the list of bone points we recognize the second group described by Savenkov and De Baye, viz., thick, narrow points. Savenkov assumed that the grooves of these weapons served for chipping flint, and in all probability such a technique was known to the loess dwellers. More often, however, the gutters are too shallow and sometimes seem in places little adapted to flint trimming, e.g., on the middle of the broad face near the shaft, or on the transition from the broad to the narrow face. Traces of a substance used as a fastening could not be established with

certainly. One may, however, refer to the grooves as so-called blood or poison grooves.

Two pieces of ivory are to be classed among incised objects (Fig. 8, Nos. 9, 10). The small, almost triangular one, flat in cross section, bears on the long margin a groove, 1-2 mm. deep and of like breadth, which stretches along about two-thirds of this margin and exhibits traces of a white substance which must have served as a mode of fixing stone splinters. The back of the

specimen is marked by short parallel transverse incisions. The whole is evidently the handle of some implement. The use which the second object served is problematical. It might be an incomplete handle. Attention should also be called to the apparent representation of an eye toward one end which gives the specimen a remarkable similarity in appearance to the stylistic fish idols of the neolithic period of Angara.

The most remarkable piece, the baton (Fig. 13, No. 18 and Fig. 10), is formed from a piece of reindeer horn. The distal end seems to have been broken off, and the two ends near the perforation were cut off; the perforation was produced by conical workings from both sides. The length of this undecorated baton is 23 cm.



FIG. 10.—Baton of reindeer horn from Afontova mountain. $\frac{1}{3}$.

Finally, among the specimens said to have been found at Afontova mountain is the peculiar implement reproduced in Fig. 11. Its patina suggests that it came from the loess, but no definite information is recorded as to the circumstances of the find. The specimen is made of deer horn, roughly hewn at the proximal end; the opposite end has the appearance of having been broken off. The entire surface has been artificially smoothed and traces of incisions are scattered irregularly over the surface. Near the proximal end is an oval perforation, greater in dimension

at the surface than at the center of the horn. The longer margins of the perforation are worn smooth, either by use or intentionally against some smooth object. The oval shape of the perforation, the smoothness of its margins, the form and adaptability to the hand of the whole piece, give one the impression that it was the handle²⁰ of a weapon. What kind of weapon it was is not clear, for, as stated, on account of its color, the piece must have come from the loess and it is difficult to believe that a polished stone ax should have come from the loess.



FIG. 11.—Baton of deer horn. Afontova mt'n. $\frac{1}{4}$.

All of the above-mentioned finds from Afontova seem to have been correctly ascribed to one and the same culture level, but there remains a small number of stone implements for which a definite relationship has not yet been established. These are the jasper and quartz artifacts, blades from 3.5 cm. in length, in part with splendid steep retouching along one margin, scrapers and awls from 2 cm. in length, also carefully retouched, in all about a dozen microlithic tools (Fig. 12), which were found in an isolated spot in a scarcely distinguishable culture seam. Associated with them lay the fragment of a scraper, chipped in

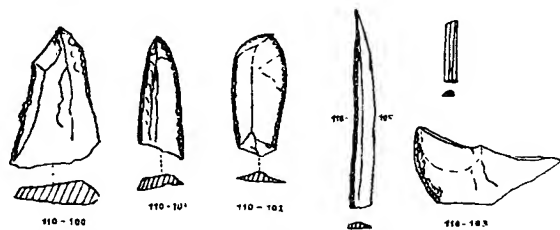


FIG. 12.—Microliths. Afontova mountain. $\frac{3}{4}$.

the usual way except that the retouching was less steep. The presence of the small nuclei in the inventory of the above-mentioned stations presupposes the persistence of small blades, and the technique represented by the fragment of a scraper falls

²⁰ The translator does not share in this opinion. This specimen should be compared with one from Bruniquel (see *Anthropologie*, xiv, 308, 1903).

entirely within the limits of variation of this type of implement. Meanwhile one must not lose sight of the fact that among the remaining stations this kind of microlithic material is not yet known.

It is worth while once more to recall that the association of the bone and horn industry with the old type of stone industry



FIG. 13.—Implements of bone and reindeer horn. Afontova mountain. About $\frac{2}{3}$.

has been established with certainty many times, principally by prospectings, so that a distribution of the inventory amongst the various horizons is not possible without the clear results based upon Sergejev's trial excavation of Peresselentscheskij Point. The geologic section with homogeneous loess complex is in itself an argument against the theoretic assumption of two culture levels. On the contrary, I consider it possible that a systematic excavation might lead to a separation of lower levels, particularly since indications for the occurrence of two culture layers in the same section are not lacking.

Since the purpose of the present sketch is not a detailed description of the palaeolithic period in the Yenisei region, but an effort to establish, after reconnaissance, the continuance of a similar and geologically contemporaneous culture level in the wide region of the southern and middle portion of the Yenisei government, one must necessarily refrain from going into details. In addition, it seems to me that one is justified in treating monographically only material obtained through systematic excavations. In this sense, then, we will take up the description of the finds from other sites.

Kirpitschnye Sarai yielded a typical flint scraper (Pl. IV, 34), a second, likewise characteristic, made from a green quartzite pebble (Pl. IV, 33), further retouched splinters, small nuclei, a large number of blades, some prismatic, others triangular in cross section, and many examples of a scraper oval to rectangular in outline (Pl. IV, 45). The upper face of the latter is always worked by the removal of large longitudinal flakes; the margins were carefully retouched; both small ends were formed into true plane edges through short sloping chippings on the under face. Moreover the under face is formed as usual by means of a single surface of fracture. An animal rib cut in many places on both margins is not to be regarded as an object intended for any definite purpose (Pl. IV, 21).

Unmistakable examples of the known scrapers were found at *Woennyi* village, among them a finely-worked double scraper which could also be used as a point (Pl. III, 28). A small disc-shaped scraper corresponds in its less complete workmanship to the types from Afontova and Peresselentscheskij Point. Aside from a number of bone and antler fragments which bear traces of animal teeth, there are those which bear tool marks; a flat piece of bone with a deeply cut groove on one border (Pl. III, 3), and the fragment of a bone lance-head, flat in cross section, represent an industry based on cutting tools, to which is to be added a tusk that was mentioned earlier as raw material—sawed through and split lengthwise, together with several fragments of ivory.

Finally *Ladeiki* yielded a number of scrapers, undoubtedly of the type already described. A comparison of examples of Pl. IV, No. 1, with Pl. I, 5, or Pl. IV, 3, with Pl. II, 55 and Pl. I, 15, makes further citations unnecessary.

The only good artifact in the collection from *Ajoschka* is a crude nucleus with subsequently retouched scraping edge on one

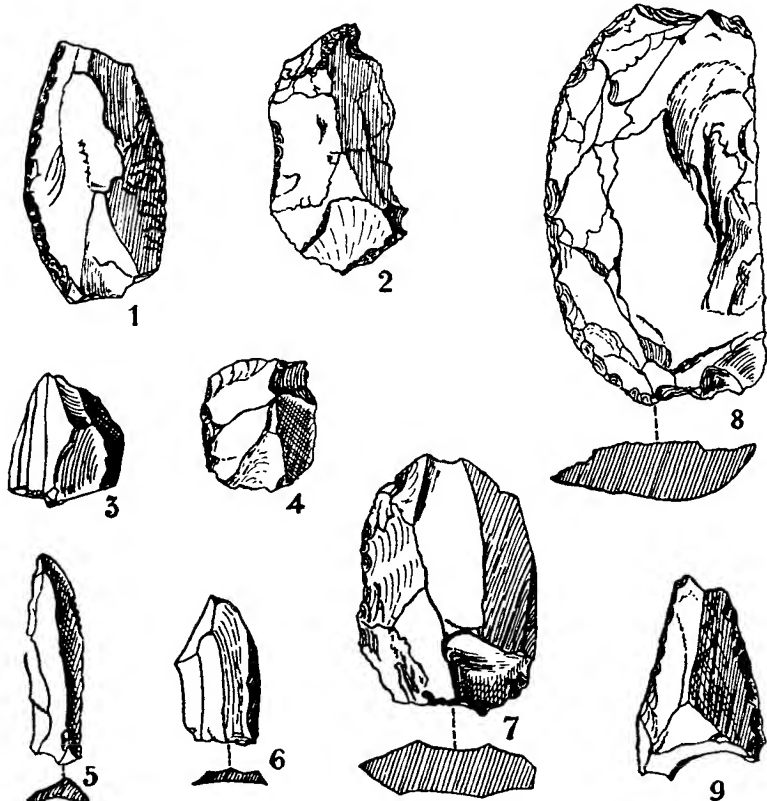
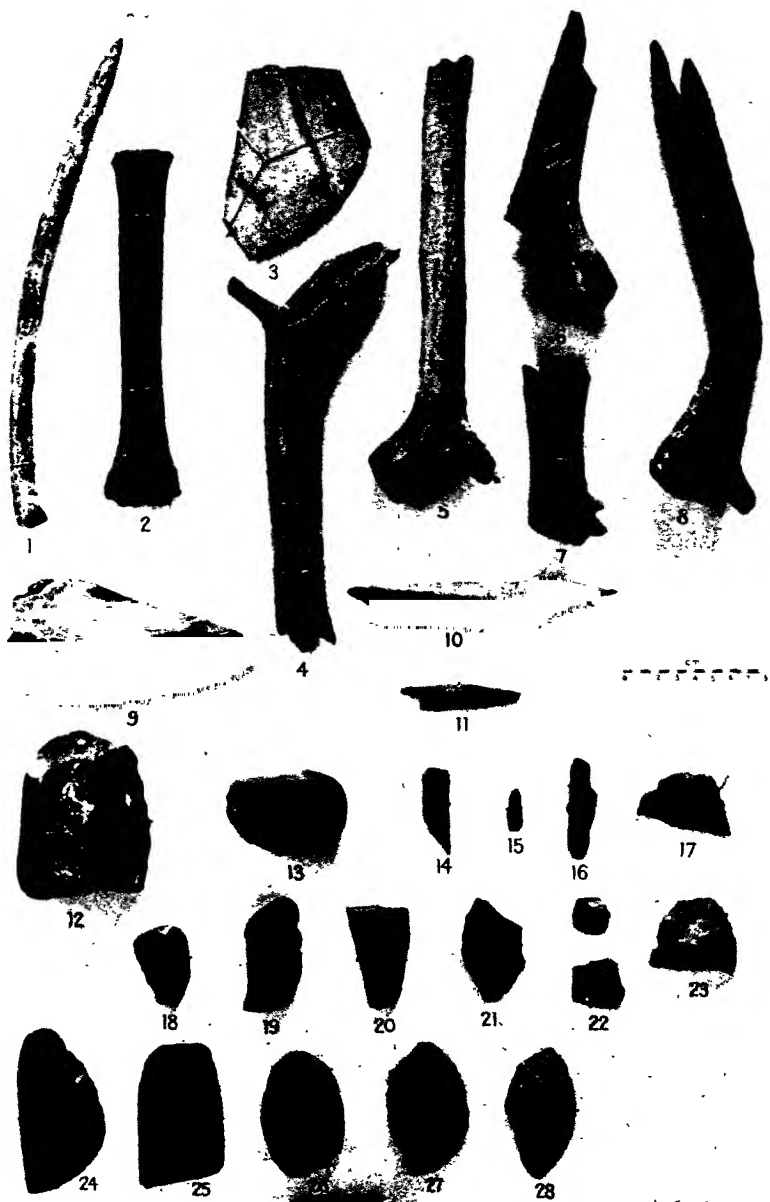


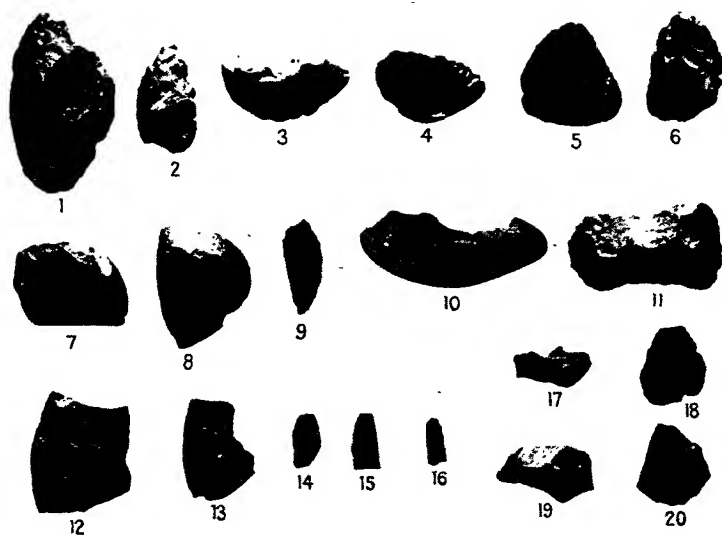
FIG. 14.—Stone implements. Lepjoschkina (nos. 1-7); Busunova (nos. 8, 9).
About $\frac{1}{2}$.

side and marks of utilization at several points, similar in technique to the industry from other places, but in itself hardly a typical tool.

The principal forms which *Busunova* yielded are reproduced in Fig. 14, Nos. 8, 9. Half of the under face of the large scraper of bright green jasper consists of the natural surface of the pebble



IMPLEMENTS OF STONE, BONE, REINDEER HORN, AND IVORY FROM WOENNYI VILLAGE, ABOUT 18



PALAEOLITHIC IMPLEMENTS

Above (nos. 1-20) stone implements from Ladeiki, below (nos. 21-45) implements of bone and stone from Kirpitschnye Sarai.

from which the implement was made. The surface is wholly unworked except for the removal of two flakes by way of accommodation. The upper face is reduced by means of flaking, only partially successful because of the unsatisfactory mode of fracture of the stone—a mode which prevented the production of a good percussion platform, and yet the workman succeeded in producing a well-arched cutting or scraping edge. The second piece, also of jasper, is to be classed as a double scraper rather than as a point. It is triangular in section whereas the other points represented in the culture are worked down to a flatter level. The careless retouching of one margin is in itself not without parallels among the true points, but the angular outline excludes this piece from the series to which Peresselentscheskij Point (Fig. 7, 3), Lepjoschkina (Pl. III, 28), and Bateni (Fig. 15, 5) belong. The whole technique represented by the implement corresponds to that observed elsewhere in the same region, so that it must be looked upon as the product of the same culture level to which the other stations belong even when not found in association with the wholly typical scrapers. The inventory of the Busunova station is supplemented by several retouched splinters, a second well-worked scraper, and half of a river pebble, the latter being retouched on the under face of the steep sloping surface of fracture 2-3 cm. high.

Twelve artifacts were found in the vicinity of *Lepjoschkina*—among them six nuclei. On one of these it was possible to fit two partially retouched blades. The nucleus is represented in Fig. 14, No. 7, and one of the two blades in the same figure, No. 5. The nucleus itself was retouched along one side of a margin in order to be used as a tool. The material is cryptocrystalline quartzite. The small nucleus (Fig. 14, No. 4) was used in like manner, as was also No. 3. Proof of such use is first of all the working of the adjacent portion of the under face by means of small flakes, the obvious purpose of which was to produce a blunt angle. Nearly every nucleus was further used in one way or another—the flat nucleus (Fig. 14, No. 6) for example, bears fine retouches near the broken point—yet the original character of a nucleus is vouched for by the blades which

were struck from it. The broad blade of brown jasper with a portion of the pebbly surface on the upper face bore careful retouching at two points (Fig. 14, No. 2). Near the point there is a small notch that might have served as a spoke-shave.

The best specimen in the small series from Lepjoschkina is the point made from a slate pebble (Fig. 14, No. 1). The under face was as usual produced by a single surface of fracture without retouches; the upper face was flattened by the removal of a few flakes so that the maximum thickness is only about 0.95 cm. (Peresselentscheskij Point 1.05 cm., Bateni 1.15 cm.). The point is missing. The specimen is bilaterally symmetrical. One margin bears a double series of retouches, the other a single series of somewhat lighter retouches. The somewhat thickened base was chipped so as not to hurt the hand.

The remaining station, *Bateni*, is characterized especially by relative richness in artifacts. We select for description a series of striking implements. We find the same familiar scrapers of various forms, but always of the same technique. The under face is nearly always produced by means of a single blow, sometimes with rather crude subsequent rechipping for the purpose of reducing the thickness. Less often the under face is simply the unchipped surface of the original lump. The cutting edge is formed through preparatory removal of larger flakes and then is for the most part carefully retouched. Of this group, rich in variety, several examples are reproduced in Fig. 15, 1, 3, 4 (No. 2 has three utilizable scraping surfaces). The artifact reproduced in Fig. 15, No. 7, is to be included here because of its technique. It was completed on the under face by flat retouching confined to the cutting edge. The result is a flat, hollow, plane edge. The production of the cutting edge from both sides is a striking feature. Without this detail one would, as already stated, place the specimen without hesitation in the series of scrapers. This technical singularity is a bond of union between the specimen in question and certain examples of an older type. The implement of striped, bright green jasper reproduced in Fig. 15, 9, is obviously related to the foregoing. The one striking difference is that whereas the former has a typical flat under face, the latter is

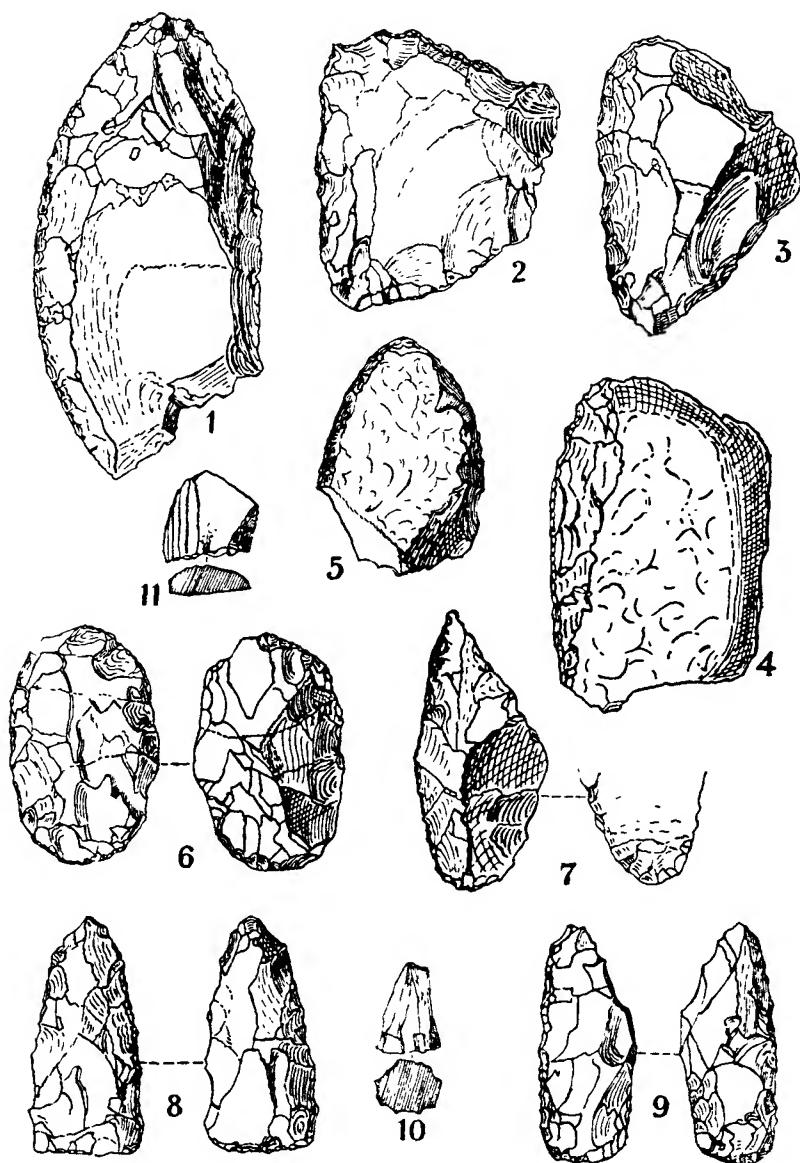


FIG. 15.—Stone implements from Bateni. About $\frac{2}{3}$.

chipped on both faces but with the fine retouching on the under face confined to the arched edge.

The implement reproduced in Fig. 15, No. 5, is formed from the same raw material as the scraper, 4. The tip of the point is broken; the right margin is roughly retouched in comparison with the left. Retouches of accommodation are to be noted on the base. The under face is a single surface of fracture. Two small nuclei (Fig. 15, 10, 11) correspond throughout with examples from other localities but do not show any definite indication of subsequent use.

The small cleavers (Fig. 15, 6, 8) are worthy of special notice. The first is of an oval type with both faces completely worked and with marks of utilization along the margins. Its maximum thickness is 1.8 cm. In technique, condition, and patina as well as material (striped, bright green jasper), this cleaver is closely comparable with the scraper with plane edge already described (Fig. 15, No. 7). The second is a smaller, **triangular type** with marks of utilization along the margins and the point broken through use. Its maximum thickness is 1.5 cm.

SUMMARY

If here and there doubts have arisen as to the palaeolithic age of the culture from Afontova mountain, they could hardly have been dissipated hitherto. Now the observed geological sections at several points speak clearly enough and even the little that we can say today with certainty concerning the fauna suffices, so far as it goes, to justify us in placing the Afontova culture not nearer to the present at least than the closing phase of the last geologic epoch. Living under a severe continental climate in a steppe environment,²¹ the palaeolithic hunter of the Yenisei region chose by preference his temporary abode on the loess, which was in process of formation near restricted water courses. Cave habitations have not yet been reported in this region. The stations in the open, recognized here by means of extended but somewhat thin culture deposits, there by means of limited hearths, in certain cases only through culture remains uncovered by the wind, have been located along the Yenisei

²¹ See plan, Fig. 16, showing the present distribution of steppe and forest in relation to palaeolithic sites.

valley and its immediate vicinity all the way from Krasnoyarsk to Minussinsk.²²

Geologically the sites seem to belong to one and the same epoch, viz., the transition between diluvium and present. The fauna is not inconsistent with such a conclusion. The culture remains are, as we believe to have been proved, of such kind that we are justified in assuming that all the stations belong to the same culture level.

To which level do they belong? A considerable portion of the Yenisei palaeolithic forms find their parallel in the typical Mousterian and the transition to the Aurignacian of Europe. For the series of side scrapers, the double points, the single points, awls, punches, absolute comparative material is to be found at the type stations of Le Moustier, La Ferrassie, and above all La Quina, to mention only the best-known sites. The rock shelter of Audi can also be drawn upon in a measure for comparison. But after such comparisons there still remains a residue, if we next consider only the stone industry, which cannot be matched in the same levels. The small duckbills, narrow blades, delicate nuclei, and nuclear-shaped scratchers are pronouncedly late palaeolithic in comparison with the western material. In a few cases a comparison may be made, but the more distinct types, the small, entirely or prevaillingly round flat-scrapers, are, as noted by Obermaier,²³ in themselves not

²² Proofs of the presence of the palaeolithic period are reported from Sykova east of Krasnoyarsk, from the valley of the Tschulym south of Atschinsk near Ligostajeva, and Staraja (Novoselovskaja Volost), also from Borki (Novo Michailovskaja Volost); from the last-named locality, Sosnovski collected a fine double scraper. We found a similar implement in Potroschilovo at the mouth of the Tuba, an atypic splinter with pronounced glossy patina and one-sided retouching, which might well be of palaeolithic age. A corresponding geologic deposit or culture deposit has not yet been found. Finally it should be recalled that an excavation by A. S. Jelenjev was carried out in 1891 at the mouth of the Birjussa brook, 45 km. above Krasnoyarsk. Three distinct culture levels were reported; the lowest lay at a depth of 2 m. Among the objects found during the excavation and in part preserved at Krasnoyarsk, are bone points with longitudinal grooves on one side, a form repeatedly noted from Afontova, and a number of small, relatively thick scrapers with one-sided steep retouches, which do not occur in the neolithic epoch, but which find very good parallels in the palaeolithic, for example, Pereselsentscheskij Point. Unfortunately no record was kept of the culture levels from which individual specimens came.

²³ Mitt. d. prehist. Komm. d. Akad. d. Wissenschaften. Wien, II, 2, 1912.

well adapted for the determination of definite archaeological levels. Besides, one should perhaps speak of the Aurignacian character of the technique, because of the frequent excellent retouches which in many cases surround the entire margin, and one could for this classification give some weight to the nuclei

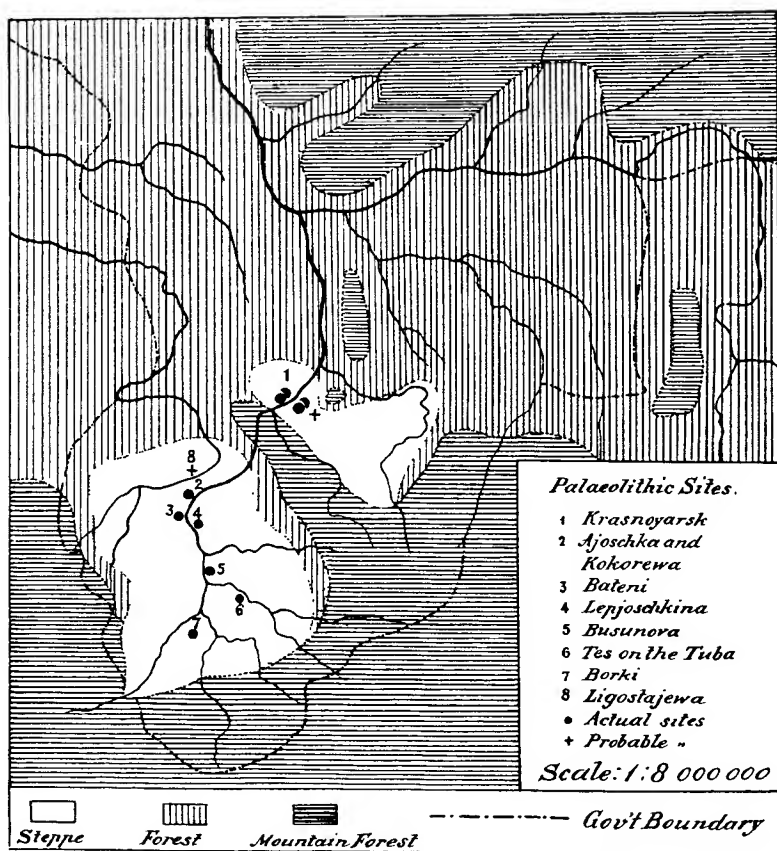


FIG. 16.—Palaeolithic sites of the Yenisei Government.

used as scratchers. It should also be noted that the later stages are represented neither in technique nor in form (absence of the Solutréan retouch) but certain general criteria suggest the Aurignacian, although no single typical form is present. If we take the total complex of the finds, for example from Peresselentscheskij Point with its combination of older and younger forms

which go with an unembellished but well-developed bone industry, we have nothing in the west of a corresponding character to exhibit. The palaeolithic workman who produced, out of the same lump of stone, arched scrapers and points, duckbills, narrow blades and elegant nuclei, and added to such an inventory a spear point and a bone punch, had, if the expression is allowed, not learned in the western workshops, at least had not taken part in the development of the west.

If it is not permissible to place the industrial remains of the Yenisei valley in the lower palaeolithic period, neither can they be identified as belonging to one of the epochs of the upper palaeolithic. Indeed careful excavations may give new information and the problem seems to be important enough to stimulate such.²⁴ For the present we shall limit ourselves by designating the old Stone-Age culture of the Yenisei as belonging to the upper palaeolithic with a Siberian facies.

MUNICH, BAVARIA.

²⁴ B. E. Petri, who excavated on Wercholensk mountain near Irkutsk, and is planning to publish a report as soon as possible, wrote me under date of June 25, 1920, "that Irkutsk and Krasnoyarsk represent the same epoch, viz., Magdalenian. The objects are the same. Nearly all of your drawings look as though they had been made from the things I found, so remarkable is the similarity. . . . You have a complete *bâton de commandement*, I have harpoons," and under date of May 3, 1921, "I am convinced that we have to do with the Magdalenian, to be sure with many special characteristics." We look forward with great interest to the publication of Petri, based on systematic excavations, particularly as the above cited letters leave us to assume that the Siberian upper palaeolithic with its peculiarities will widen the extent of our knowledge. It should be noted that the harpoon of the Afontova culture was perhaps not entirely lacking, though finds are yet to be reported. According to my notes, one of the spear points bore, on the lateral margin near the point, shallow notches whose execution points to the unmistakable intention of producing barbs.

THREE-POINTED STONE *ZEMI* OR IDOLS FROM THE WEST INDIES: AN INTERPRETATION

By ADOLFO DE HOSTOS

HISTORY

MODERN archaeologists have generally shown a marked tendency to regard the three-pointed stones from the Greater Antilles as enigmatical, mysterious, and puzzling.

Dr. J. W. Fewkes¹ has reviewed the interpretations of these objects given by several authors and has critically discussed most of them. We learn from his excellent monograph that the three-pointed stones have been variously interpreted as paint mortars; representations of the genius of Porto Rico in the figure of a man or animal; as symbols to account for volcanic phenomena; as the genius of evil weighed down by Boriquén; as cosmotheogonic symbols—the Creator and inert matter on two sides of chaos, which extends over the firmament; as clan idols or images of tutelary totems—this last being probably the first step taken towards a rational interpretation.

The late Father Nazario, the most successful local collector of Indian antiquities, saw in three-pointed stones a symbol of the Biblical legend of Jonah being swallowed up by the great mythical fish! No doubt the father was influenced by the theorists who, fifty years ago, claimed contact between certain peoples of the Mediterranean basin and some islands of the West Indies.

Mrs. Zelia Nuttal² believes that the three-pointed *zemi* is a symbol of the Above, and infers, on this evidence, that the aborigines of Porto Rico practised some form of a Mexican cult.

Mr. T. A. Joyce,³ while admitting that "their exact use is a mystery," rightly believes, without giving reasons, that the idols

¹ J. W. Fewkes in 25th Annual Report, Bureau of American Ethnology, 1907, pp 128-132.

² The Fundamental Principles of Old and New World Civilizations, p. 118.

³ Central American and West Indian Archaeology, 1916, p. 186.

are to be identified with the three-pointed agricultural *zemi* mentioned by Pane. He has even suggested that the conical projection represents the root of the *yuca* plant.

Dr. Fewkes, in his latest researches upon the subject known to the author (1913), advocates the theory that these objects were *zemi*—idols.

Casual observers have perceived in these stone forms relations with weapons and instruments of torture. Local tradition in Porto Rico, even when speaking through the mouths of illiterate individuals, whispers that the objects were used to aid women in parturition.

METHOD OF RESEARCH

In approaching the solution of this problem we propose—in order to restrict to the minimum the field of conjecture and imagination—a survey of (a) the historical, (b) the archaeological, and (c) the auxiliary or collateral evidence. By this last line of conduct we mean that, insofar as it is possible within our capacity, we must limit the application of collateral evidence only to those cases in which scientific corroboration may be obtained.

DISCUSSION

Recognizing the fact that in this particular case it would be a great error of judgment to ignore the testimony of one whom we have good reason to believe was an eyewitness of aboriginal cults and ceremonies, we will begin by examining the testimony of Ramon Pane. This friar, in the last years of the fifteenth century, went among the Indians of Haiti, learned their language, and reported to Columbus on their religion. Pane states that certain *zemi* "have three points and they think they cause the yuca (manioc) to thrive."⁴ This is quite a definite statement, worthy of careful investigation, especially when we remember that, of the thousands of prehistoric stone relics gathered in the West Indies—except some which are obviously utilitarian, like certain flat, more or less triangular blades and a few stone rubbers, having three roundish points—the only class of objects which could possibly be identified as the objects mentioned by Pane are

⁴ As quoted by Fewkes, *op. cit.*, p. 131.

the three-pointed or mammiform stones. He tells us that these stones were *zemi*—a collective term which may be translated as “sacred thing”; specifically, an idol, or thing to be worshipped. He adds that the Indians thought that these idols caused the yuca to grow.

It becomes then a logical necessity to find out in the historical records—and not by assumption or implication—what was the immediate object or purpose of idolatry within the Haiti-Porto Rico culture-area. Any interpretation based on the religious, social, or political principles of other peoples of the world, even of other peoples of America, is purely speculative.

What little we know about the worship of idols in this region may be summarized in the following excerpts, compiled by Mr. H. Ling Roth⁵ in his “Aborigines of Hispaniola”:

Most of the *caciques* have also three stones which they were said to worship, one to help corn and all sorts of grain, a second which helps woman to be delivered without pain, and a third which procures rain or fair weather according to requirement.

. . . some [idols] that speak, and others that cause things to grow, some that eat, others that cause rain, and others that make the wind blow.

They have a name for every one, [zemi], regarding this as their patron on this subject, and that as their patron on that subject. . . .

These people only ask of their gods plenty to eat and drink, and good health, and victory over their enemies.

Worship, then, was almost, if not exclusively, practised for temporal benefits desired. One of the benefits expected proceeded from the cultivation of the soil. In this connection we learn that certain idols were used: (a) to help corn and all sorts of grain, (b) to cause things to grow, (c) to cause yuca to grow.

Keeping in mind the fact that a *zemi* with three points was thought to promote the growth of the yuca plant, we may infer that the idols which helped corn and all sorts of grain, as well as the one which caused things to grow, may have had the same, or at least a similar, related form.

Turning our attention now, for the present, to the archaeological evidence,⁶ it is thought convenient to group these objects in

⁵ Jour. Anthr. Inst. of Great Britain and Ireland, vol. xvii, no. 3.

⁶ For detailed descriptions of three-pointed idols see Fewkes, op. cit., pp. 111-128; Joyce, op. cit., pp. 185-186; and Otis T. Mason, “The Latimer Collection of Antiquities from Porto Rico,” Smith. Rpt., 1876.

accordance with a biological scheme of development—from the simple to the complex—in order to approach the interpretation of the morphological details:

1. A small conoid monolith, without carvings and with plain projections—that is, without any intentional modifications of the lateral extremities (Fig. 17, a). Each has a pronounced conoid projection.

2. The same as above, except that there are rudimentary protuberances at the anterior and posterior projections (Fig. 17, b).

3. A three-pointed stone having a human or an animal head carved in one or both (rarely) of the lateral projections and the lower extremities of the being carved in the other (Fig. 17, c).

4. Where the head is placed on the conoid, between the apex and the anterior projection, facing toward it (Fig. 17, d).

5. Where the head or face occupies the place of the conoid projection, facing up, the stone resting on its base (Fig. 17, e).

6. Where the head or face is carved on one side of the conoid projection, facing at a right angle with reference to the lateral projections. These consist of a simple or a double protuberance or knob-like swelling (Fig. 17, f).

Although the above classification is arbitrary, there is a hint of an evolution in the form of the objects, which it is of importance to bear in mind.

As to the differences in the shape of the conoid projection, we note that the degree of convexity varies considerably in the several specimens. Some resemble closely a cone, the apex, however, never ending in a sharp point; some are conoid, sometimes resembling mammae; others are hemispherical—semicircular in outline; sometimes, cylinder-like, being circular in cross section, with a rounded apex; a few are flat-topped. Generally, in the more conoid specimens, the apex tips slightly (sometimes considerably) forward.

In this connection the following circumstance should be particularly emphasized: that the simpler, evidently the most archaic forms, have always a pronounced conoid projection (Fig. 17, a

and b). No examples of this class are known to the present writer having hemispherical or flattish upper projections.

It is reasonable to suspect that these variations in the form of objects which preserve certain constant features may correspond

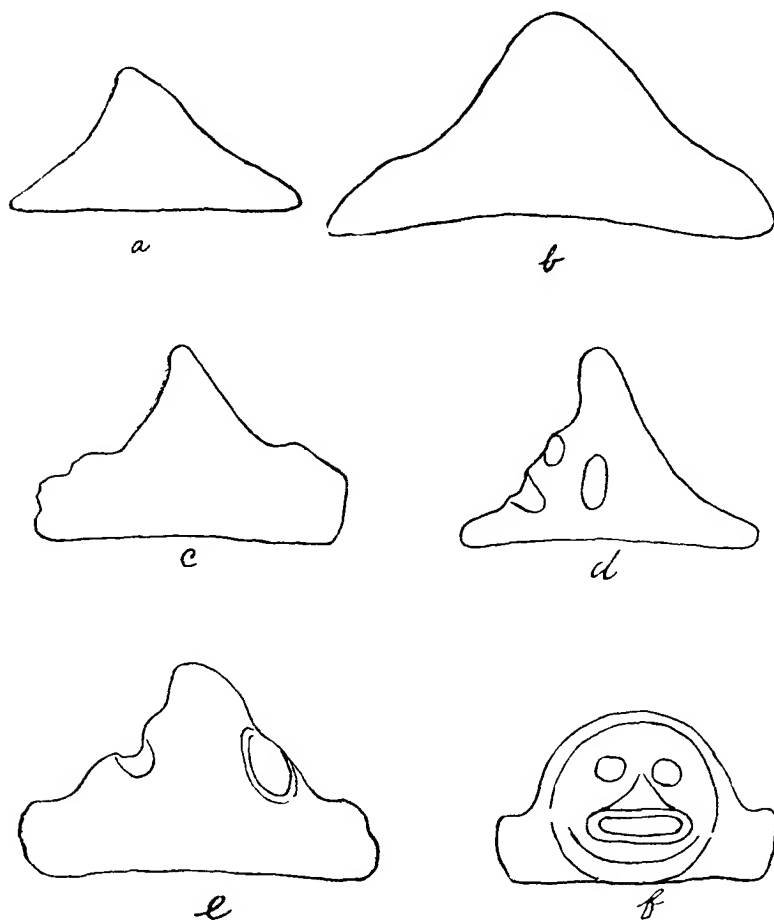


FIG. 17—Three-pointed *zemi* from Porto Rico.

to secondary adaptations in their use. This hypothesis, together with the above quoted reference to the diversity of food plants supposed to be helped by a *zemi*, allow us to infer that different forms of the *zemi* were used for different kinds of plants. In all

probability the specimens to which Pane refers as having been dedicated to the yuca plant were those of a well-defined conoid shape, with a more or less acute apex. Vague as his description is, it could not well be applied to a specimen of the rounded or hemispherical type. Thus, as will be shown later, reasons are not wanting for associating the original conoid shape with the cultivation of root plants.

We have now arrived at the climax of the discussion: what symbolical relation, if any, could there exist between the shape of these idols and the natural phenomenon of vegetable growth? The conoid projection—however modified—being the constant feature, the attempt may then be made to find a symbolical connection between it and the phenomenon of vegetable growth. The problem has been reduced to this postulate:

The conoid projection is an objective representation of vegetable growth.

In the succeeding pages we must devote our attention to vegetable growth, in its visible, superficial aspects at any rate, for we well know that no other could be within reach of the Indian's mind. Being aware of the real tendencies of Antillean idolatry, we will confine our efforts to plants of Indian origin.

As relevant collateral information an estimate should be made of the status of agricultural art among the West Indian Arawaks in order to judge as to the possibility of theoretically expecting from them the making of certain simple observations, which we will later on attribute to them, as mere incidents in the routinary tasks of aboriginal agriculture.

The Taino (Arawak) tribes of the Greater Antilles were remarkable agriculturists. They had, at the time of the conquest, developed their own methods of soil preparation, sowing, irrigation, and isolation of crops, and they were even beginning to recognize the value of artificial fertilization.⁷ They were careful to select certain periods of the year for planting.⁸ Whether of insular or continental origin, the domestication of the yuca plant and the complicated manipulation of its poison-

⁷ H. Ling Roth, op. cit., p. 271.

⁸ Oviedo, *Historia General y Natural de Indias*, Madrid, 1851, vol. I, p. 265.

ous roots, which rendered them harmless, in order to make their bread—*cazabi*—is an agricultural feat which must have required the exercise of no mean power of observation during a considerable length of time.

Some authorities believe that the idea of cultivating economic plants originated in the Caribbean region and spread thence westward around the world.⁹

Martir Angleria (Madrid, 1892, vol. II p. 435) has preserved a tradition clearly pointing to the beginning of agriculture [in Haiti] by the domestication of esculent root plants. He also describes the several roots which, during a long time, served as the only kind of food to the original inhabitants. The value of this information on the elucidation of the present theory cannot be over-estimated. It is precisely a root-growing people whom we should expect to evolve the peculiar ideas connected with the development of the three-pointed stone as an agricultural idol.

Encouraged by a passage in Oviedo's History, where the statement is made that the yautia was cultivated in Haiti "with much diligence and special care"¹⁰ and by a botanist's belief in the great antiquity of the yautia as a cultivated plant,¹¹ we have selected for our little experiment this plant, which still yields one of the most important root crops in Porto Rico.

Recalling that Mr. Barrett bases his theory on the fact that the yautia has lost its power to produce seed, while native to the same region—tropical America—as other food plants still capable of reproduction, we gain fresh zest in the investigation as we begin to anticipate a natural sequence of happenings leading to the solution.

It is evident that the artificial propagation of a plant which has lost its reproductive power must have necessarily compelled the ancient farmer to watch closely the external manifestations of

⁹ O. F. Cook, "The American Origin of Agriculture," Pop. Science Monthly, Oct., 1902.

¹⁰ Op. cit., lib. VII, cap. VII, p. 275.

¹¹ O. W. Barrett, "The yautias or taniers of Porto Rico," P. R. Agricultural Experiment Station, 1905. He regards the yautia (or yahutia, tanier, *Xanthosoma*, sp.) as probably the oldest cultivated plant in the world.



YAUTIA TUBERS

No. 1, edible tuber of yautia plant, showing a terminal leaf bud; 2-6, stem buds of yautia in different stages of development, showing "eyes"; 7, a leaf bud. Notice the diametrically opposed "eyes" on No. 2. The well-developed bud seen growing at the base of shoot (No. 6) is slightly larger than another growing on the opposite side, not seen in the photograph.

the phenomena of germination. Of course we mean close observation for the practical purposes of agriculture. We must insist upon making clear our position. We feel strongly inclined to regard the employment of idols in Antillean agriculture as the combined result of three factors: (1) a wish to promote the well-being of slow growing plants (the yautia's tubers, for instance, not maturing until the twelfth month); (2) woodcraft and plant-life knowledge acquired in the course of the native's routinary activities in the field; (3) his mental subordination to animistic beliefs.

It seems idle to accept the validity of any interpretation ideologically connecting the idols with complex theogonic and cosmogonic abstractions.

Let us now uproot an adult yautia plant and see what is going on beneath the surface of the soil, since the edible parts of the plant are the tuberous offsets of the rootstock. Observe these fleshy underground stems with their "eyes" in all stages of growth: firstly, a minute whitish speck, slightly raised above the surface of the tuber; then, as it swells, becoming a protuberance which, forming the bud, takes a decided conoid shape, the apex generally tipping to one side (according to its position on the tuber). See Pl. V, Nos. 3 to 6. The well-developed bud assumes sometimes a roundish shape, bulging to one side (No. 5). From the apex develops the shoot which later differentiates into a plant stem (No. 6). Long before the shoot has appeared new "eyes" develop near the base of the stem bud, often at the extremities of one of its diameters (Pl. V, No. 2).

The "eyes" are germination points which may or may not develop into suckers or new tubers in accordance with certain conditions. It is a common practice in Porto Rico to cut up the tubers into "sets" or pieces for propagation. We presume that the method was also known by the aborigines. While doing this, any farmer, modern or ancient, must be careful to see that "eyes" are included in the sets he intends to sow. Moreover, while repeatedly handling these pieces, the agriculturist becomes familiar with the appearance and condition of the eyes and buds in all their stages of growth as he may show individual preferences in

this respect in connection with his wishes to obtain the best "seed" and the quickest results. The fact that these "eyes" are germination points scattered over the surface of the tuber is therefore firmly fixed in the farmer's mind.

We may now assume that—according to the processes of thought of primitive man yet in the animistic stage—the Indian saw in the development of the bud, which he knew by experience to contain the germ of a new plant, the activities of supernatural forces, of spirits—*zemi*—upon which he naturally bestowed a human form and human attributes. If the earth, the sky, the stars, the wind, rain, thunder, and the animals were possessed of spirits which directed their actions, why should we hesitate to invest their food plants with a similar power?

Most primitive beliefs in supernatural beings are logically (in that state of mind) associated with propitiatory practices. Whether good or evil the spirits of things must be pleased—to gain the favor of the former or to prevent the ill-effects of the latter. For a people incapable of much abstraction, the easiest way to please these unseen forces (spirits) was to make—incise, paint, carve, or weave—their material representations or imaginary likenesses and to propitiate them according to the particular form of worship involved. Throughout the Antilles, indeed throughout pre-Columbian America, it was believed that any material representation carried with it the powers and attributes of the thing represented. Is not this the very essence of idolatry? At this point we may suggest that the conoid projections of three-pointed stones are representations of the stem buds of certain tubers used as food by the Taino tribes of Porto Rico, Haiti, and perhaps other islands of the archipelago; that the conoid was made to symbolize the invisible power of germination which they knew to reside within the bud. The spirits supposed to reside within the object were propitiated in order to help the plants to grow. The bulging conoid of the *zemi* would, by sympathetic magic, remind the plant spirit of the maker's wish for large, fat tubers, capable of germination, of fruitful reproduction. It will be seen, then, that if the plant spirit was represented by a conoid stone, the original forms must have been devoid of bio-

morphic carvings. This theory would satisfactorily explain the existence of very small specimens (as well as some very large ones)¹² entirely devoid of life carvings and of which, to the present, no interpretation has been possible.

By a simple process of association of ideas this apt symbolization of germination in the *yautia* plant may have been extended to other plants. Or, by a gradual process of form modification, an effort may have been made to simulate the entire form of those roots which were devoid of "eyes." There is a specimen in the writer's collection resembling a yam or a large sweet potato.

It may well be imagined that, as the *yautia-spirit* cult developed, the attention of the *bohii*, priest-sorcerer, was attracted by the simultaneous growth of new eyes appearing near the base of the bud. To him, no doubt, the swelling bud lodged a spirit. But there were also visible points of lateral growth as evinced by the new "eyes"—a process which must have suggested to these sorcerers the existence of vital motion from the inside outwards—laterally—in addition to the vertical growth which culminated in the formation of the plant stem.

To this moment in the evolution of the three-pointed stones may correspond Group 2 of our classification outlined above, stones with knob-like swellings in place of biomorphic carvings at the lateral projections. It seems but natural to believe that the mind which saw a supernatural spirit ruling the life of the plant—and which pretended to locate its pulsations in the fecund buds—would see in the course of time, pressed by the necessity of giving an outward representation to his animistic concepts, the head and the propelling limbs of the spirit hidden in the new swollen spots which he had already represented by means of rudimentary protuberances in the early forms of the fetish. Hence the carved human or human-like face and the human or human-like legs and feet carved in the lateral extremities. The forward motion implied by the position of the human figure would have to be expressed by showing the lower extremities of the being depicted in the only position compatible with rapid forward motion for a man lying down on the stomach—the crawling position.

¹² The smallest of these specimens known to the writer is about an inch in length—on the longer axis of the base; the larger is nearly 30 inches long.

Unquestionably the idols were used by burying them in the soil, somewhere within the garden or plat, the conoid projection up, near the particular plants whose "fertilization" it was thus thought to accomplish. At any rate there is historical evidence to the effect that certain objects were hidden in the ground for this purpose. So strong had this belief become among the natives that, after the Conquest, even Christian images were sometimes stolen from the churches for burial in their plantations.

Fertility—i.e., the multiplication of the edible roots of the yautia, the yuca, the sweet potato and other plants—would then be obtained by propitiating the yautia, the yuca, or the sweet potato "spirit" through the medium of its effigy, the *zemi*, so devised as to convey to it a prayer to "move on" within the bud, that is, to grow, to thrive, and to accelerate the reaping of a bountiful harvest.

We must now discuss the presence of avian and reptilian elements seen in several three-pointed stones. Notice, in the first place, that anthropomorphic representations are by far the most abundant, a fact which seems to suggest that the former is the primary and the latter a secondary development.

In relation to agriculture, the animal groups represented—birds, reptiles and mammals—may be divided into two classes: (1) those that are beneficial to plant life; (2) those that are injurious to it.

The love or fear of both kinds of natural agencies has given rise to corresponding cults in primitive societies. Representations of the first class are the most common and therefore we may suppose that those belonging to class 2 represent a tertiary development of the plant spirit cult.

A study of the carvings representing animals beneficial to the plants reveals the fact that those represented are either birds or reptiles. Many of these creatures are predacious animals feeding on insects, worms, and larvae very injurious to plant life. Therefore these animals may be considered the farmer's friends or benefactors. The West Indian mole cricket (*Scapteriscus didactylus*), to cite only one instance, is a burrowing insect and a

tenacious enemy of tender plant growths—rootlets, buds, shoots, etc. Tobacco and corn—two plants of Indian origin—are especially injured by it.¹³ The most efficient enemies of the mole cricket are to be found among the following Porto Rican birds: the Cuban green heron, the “falcon” (sparrow hawk), the white heron, and the “buhó” (a species of owl?). Among the reptiles the various lizards, especially the ground lizard (*iguana*) are also enemies of this cricket as well as of other injurious insects.¹⁴

Of class 2 two animals only could be identified by the author among the many specimens with which he is familiar: a rodent and a waterfowl, the hutia (probably *Capromys*), and the *Yaguaza* (*Dendrocygna autumnalis*), a nocturnal species of tree duck. The hutia, which has become extinct in Porto Rico, was, like the present field rat, an unwelcome visitor of the yautia plat. Indeed, the plant derived its name from the animal, as yautia (ya-hutia) means place of hutias, a derivation which implies that in ancient times the hutia abounded where the yautias were plentiful. The *yaguaza* is a nocturnal bird. Alighting in flocks in a sweet potato field these birds devour all the tubers partially exposed above the ground. Most bird- and lizard-shaped specimens have human or human-like limbs, a fact which corroborates the opinion that the carvings are not realistic representations of the animals themselves but imaginary semblances of the animal benefactors. Throughout America worshipped animals were often symbolized by figures, partly human, partly animal.

In the great majority of cases bird heads carved in three-pointed idols have long, more or less curved, bills. There are rare instances of birds with a short, straight, pointed bill which is generally seen in Porto Rican fruit-eaters. In a general way the carvings resemble some of the wading birds living along the streams and in the marshes and lakes of Porto Rico and Haiti.

¹³ R. H. Swaluwenburg, “The Changa or West Indian Mole Cricket,” Porto Rico Agr. Experiment Sta, 1918, pp. 16-19.

¹⁴ Ibid, p. 17. Ledru (Viage a Puerto Rico, 1793) states that two large species of lizards, over a meter in length, were in his time common in the island.

Perhaps some now extinct species of the ibis and the flamingo are represented.¹⁵ Many of these birds are insectivorous.¹⁶

DECORATION OF THREE-POINTED IDOLS

The conoid process is at times decorated with incised designs (Pl. VI). The patterns, in the several specimens, include parallel and angular lines, concentric circles, small pits (cup cuttings), chevrons, triangles, and semicircles. The combinations of some of these elements, in the majority of cases, have the appearance of formal designs used primarily by the Taino tribes for purely decorative purposes. Several of these designs are very similar to patterns seen in the decoration of wooden, stone, and clay artifacts from the same region. There seem to be no grounds, in the present state of our knowledge, for attaching any special symbolic significance to these designs, unless they are interpreted as variants of a diffuse symbolism involved in the decoration of other non-utilitarian objects. However, the relative abundance of complete circles and pits seen scattered over the surface of the conoid projections may bear a certain symbolic relation to the "eyes" which frequently dot the surfaces of the stem bud of the yautia. At any rate, to us the designs seem simply to denote early manifestations of the aesthetic sense of the race in connection with certain propitiatory practices of aboriginal worship.

THE CONCAVE BASES

One feature of three-pointed idols which is indeed difficult to reconcile with our interpretation is the almost universal presence of a concave base.

If, as stated above, these idols were used by burying them somewhere within the "conuco," or native garden, the scooping out of the base would be unnecessary. At the same time, according to our theory, there is no explanation to offer for the occasional

¹⁵ Wetmore (Birds of Porto Rico, U. S. Department of Agriculture Bulletin No. 326, p. 27) says that the white ibis is no longer found in Porto Rico and that the flamingo was formerly fairly common. Fewkes (25th Ann. Rpt., B. A. E., plate XLIV, b) figures a three-pointed stone resembling an ibis.

¹⁶ The reader is referred to the often quoted work by Dr. Fewkes for some material on the identification of the animal carvings of three-pointed stones. The following are here of interest: Plate XLI, figs. b, c (lizards); XLII, a, b (lizards); XLII, c (bird); XLIII, a (lizard); XLIII, b, c (birds); XLIV, a, b (birds); XLIV, c (owl).



A THREE-POINTED STONE ZEMI FROM SANTO DOMINGO

Notice the extraordinary resemblance of the upper (conoid) projection to a plant shoot. The round protuberance in *b* and the incised circles (in *b* and *c*) are suggestive of the "eyes" seen in certain edible tubers. The lower circles, near the mouth, represent ear plugs.

occurrence of traces of a resinous substance on the surface of the base and for the presence of furrows behind the anterior and posterior projections.

The concavity of the base, the furrows, and the traces of resin are strongly indicative of attachment of the *zemi* to other objects.

J. J. Acosta, the commentator of Iñigo Abbad's History,¹⁷ was the first to suggest that the three-pointed stone was attached to a stone collar. He based his hypothesis apparently on mythological grounds connected with snake worship, perhaps inspired by the popular belief (in Porto Rico) that stone collars represent snakes. Dr. Fewkes has refuted Acosta's theory, after a comparative study of the morphology of these objects.

However, we think that that part of Acosta's theory which advocates the attachment of the fertility *zemi* to the stone collar should be carefully reviewed in the light of recent progress in Antillean archaeology so notably furthered by the researches of Dr. Fewkes and Mr. T. A. Joyce.

In approaching this question it is believed that an attempt should be made to ascertain, in the first place, whether there is any possibility of associating the three-pointed idol and the stone collar as remaining material evidences of two related animistic concepts.

Mr. Joyce's researches¹⁸ have given to the stone collar its present theoretical status: a retranslation in stone of a wooden or archaic form of a *zemi* or idol connected with tree-worship.

With regard to this Dr. Fewkes adds:¹⁹

In Antillean as in other tree worship it was the spirit of the tree that was the object of adoration, and that worship was more or less connected with the material benefits desired: generally the food that the tree yielded.

Also:

The many similarities between three-pointed *zemis*, elbow stones and stone collars would seem to indicate a corresponding similarity in use, consequently any light on the morphology of one would aid in the interpretation of the other types.

¹⁷ Historia Geográfica Civil y Natural de la Isla de San Juan Bautista de Puerto Rico, 1866.

¹⁸ Central American and West Indian Archaeology, 1916, pp. 188-191. Also Jour. Anthr. Inst. of Great Britain and Ireland, vol. xxxvii, pp. 402-419, 1907.

¹⁹ Porto Rican Elbow Stones in The Heye Museum with Discussion of Similar Objects Elsewhere, Am. Anthr. (N. S.), vol. xv, no. 3, 1913.

If stone collars are idols it is probable that those specimens of whatever type which are devoid of anthropomorphic and theriomorphic elements—an almost general condition—are incomplete objects. We must look somewhere for their complements. They may have consisted of detachable inlays or adjuncts of either durable or perishable substances. For what then is the indispensable outward, material symbol of the spirit supposed to dwell within the stone ring? Truly, it is inconceivable that an animistic worshipper would have been content with the mere resemblance of the collar to the branch of a tree in which a spirit resided and which he imagined capable of articulate speech expressing thought (Ramon Pane). The dialogue between an Indian and a tree spirit recorded by Pane implies that the former subjectively saw the human form which animated the latter.²⁰ The spirit and the human or animal form are here so intimately associated that we cannot obliterate one without destroying the validity of the other as a factor of primitive belief.

We have already said that to us the upper projection of three-pointed stones is a symbol of vegetable growth—originally, of bud germination of a root plant. But, although we have suggested it, we have not been able to gather sufficient data to attempt to narrate the several episodes in the evolution of this intensely interesting group of ideas. However, enough has been done to show that there are unmistakable evidences of this evolution in the stones themselves.

It is almost certain that the three-pointed idol and the stone collar are the result of two independent developments, in time and space, of related ideas or concepts. This possible ideologic relation is borne out by the geographic distribution of the objects.

Leaving for the time in suspense the question of how and when the two kinds of objects became united, we will content ourselves with remarking that there is a strong probability that certain types of three-pointed stones were, at a certain moment in the evolu-

²⁰ Las Casas (*Historia de las Indias*, Madrid, 1876, vol. v, p. 437) says that wooden idols were ill-shapen and had ugly faces of grimacing old she-monkeys ("... estatua o idolo, de mala figura, porque comunmente hacian las caras de gesto de monas viejas regañadas. . . .")

tion of tree-worship, somehow attached to certain types of stone collars.

Dr. Fewkes's belief that collar and elbow stones were used for ceremonial purposes inclines us to suspect that the stone collar (embodiment of a tree spirit or of a spirit accidentally dwelling in a tree) and the three-pointed stone (embodiment of a food-plant spirit) may occasionally have been united in magical ceremonies where certain sacrifices may have been consummated in order to impart the reproductive power to other plants than those usually placed under the patronage of the three-pointed *zemi*. At all events these stones would morphologically supply the collar with the biomorphic elements so essential in animistic forms of worship.

RIO GRANDE,
PORTO RICO.

CERTAIN SPECIMENS
FROM THE RIVIÈRE COLLECTION

BY GEORGE GRANT MACCURDY

ÉMILE RIVIÈRE, who died in Paris in January, 1922, was the last of a group of French prehistorians including such well-known names as Émile Cartailhac, Gabriel de Mortillet, and Edouard Piette. He was an active explorer for forty years (1870-1910), and gave generously of his collections to the museums of his country, especially to the Museum d'Histoire Naturelle, Paris, and the Musée des Antiquités Nationales, Saint-Germain-en-Laye. The remarkable upper palaeolithic skeleton discovered by him in the Cavillon cave east of Mentone is in the former museum, while some of the palaeolithic art objects of his collection went to Saint-Germain. The double burial of two children which gave its name to the Grotte des Enfants, also in Italy, near Mentone, is now in the Institut Catholique, Paris.

Many thousands of specimens of lesser value were still in Rivière's possession at the time of his death. These were sold at auction in May, 1922, at the Hotel Drouot, Paris, by his two sons. Several small but important lots were bid in by the author for the Peabody Museum of Yale University. They represent the following sites: La Mouthe, Combarelles, Rey, Liveyre, Laugerie-Haute, Gorge d'Enfer, Grotte des Eyzies, and La Micoque—all palaeolithic and in the Dordogne; the caves of Mentone (also palaeolithic) in Italy; and two caves in the Alpes-Maritimes, Saint-Benoit (neolithic) and Albaréa (Bronze Age).

Some of the foregoing sites have become well-known through the work of various explorers, but the caves of Rey and Liveyre are scarcely known in the literature of prehistoric archaeology. Rivière's last field work was done at Liveyre, which accounts in part for his failure to publish more than a mere notice. Rey

fared somewhat better; but both caves are worthy of additional notice. Some of the material from Laugerie-Haute, La Mouthe, and La Micoque is also selected for a brief description.

Rey.—The cave of Rey is in the commune of Les Eyzies-de-Tayac (Dordogne). It opens at a point only about 40 m. from the entrance to the cavern of Les Combarelles, one of the great galleries of palaeolithic art. Rivière was one of the first to explore these two sites. He explored the right corridor near the entrance to Combarelles in 1892-94, before the discovery of the mural engravings in the long corridor on the left. During the same period he completely excavated the floor deposits at Rey. A culture sequence can be determined for both sites, based in part on the work of Rivière, and in part on that of Peyrony:

Rey	Combarelles
3. Solutréan	4. Middle Magdalenian
2. Aurignacian	3. Lower Magdalenian
1. Mousterian	2. Solutréan
	1. Aurignacian

It will be seen from the above that Rey was the first to be inhabited and the first to be vacated. For a portion of the Aurignacian and Solutréan epochs, the two sites were occupied no doubt simultaneously, and artists from Rey might well have assisted in the execution of some of the earliest engravings at Combarelles.

The palaeolithic industrial and art objects from Rey include implements of flint and bone, javelin points of reindeer horn, bone tallies, perforated teeth of ruminants and *Carnivora*, perforated shells (*Nassa neritea*, *N. gibbosa*, and *Turritella communis*), pendants of bone and talc, worked pieces of ivory and of reindeer bone, and portable art. Rivière's finds included a bone point 33 cm. in length, finely worked and in perfect condition.

The Yale collection includes ribs split in the plane of their maximum dimensions, pitted on one face and notched along the polished margins, which might have been used for keeping tally (Fig. 18, *b*); the shell of *Nassa neritea*, perforated by means of faceting; a perforated fish vertebra; the clavicle of *Felis* perforated at one end (Fig. 18, *a*); perforated incisors of *Bos* (Fig. 19, *c*); perforated canines of *Cervidae*; perforated and notched incisors

of a small ruminant (Fig. 19, *a*, *b*, *d*, *e*); and two pendants of greenish talc and bone respectively (Fig. 20, *b*, *c*). The bone pendant had undergone the action of fire.

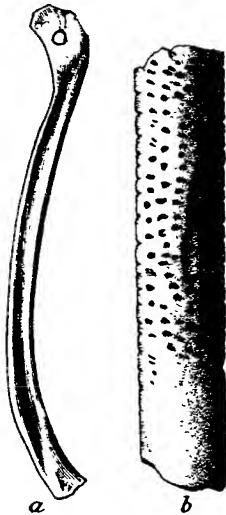


FIG 18.—*a*, clavicle of *Felis* perforated for suspension; *b*, split rib with marginal tally marks and central pitted area. Cave of Rey (Dordogne). ³⁴. Yale Univ. coll. cat. nos. 7108, 7109.

The most important specimens found by Rivière at the cave of Rey are two sculptured figures of the fish (probably salmon) each carved from a ruminant rib split in the plane of its maximum dimensions. In one of the two specimens the entire fish is represented with a high degree of artistic skill (Fig. 21). In the other only the posterior half of the fish is indicated and in a summary fashion. Whether the artist intended to take up the piece later and finish it, or left the unfinished work to be completed by the imagination will remain in the realm of conjecture. Objects of this sort were probably talismanic; in the field of magic a part might well be as efficacious as the whole (Fig. 22).

The palaeolithic artist chose his models almost wholly from the animal kingdom, with predilection for forms that would add to his food supply. Mammals predominate, with the horse, reindeer, bison, wild goat,

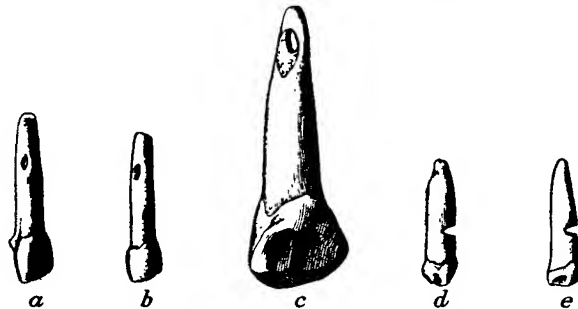


FIG. 19.—Perforated and notched teeth from the cave of Rey (Dordogne); *a*, *b*, *d*, and *e*, small ruminant; *c*. *Bos*. $\frac{1}{2}$. Yale Univ. coll. cat. nos. 7110, 7111.

red deer, cave bear, *Bos*, and mammoth well in the lead. Figures of such dangerous animals as the cave lion and wolf are also met with.

Birds and fish play a less important rôle in cave art. The author has been able to list some fifty works of cave art dealing with representations of the fish in addition to the foregoing from Rey. Trout, salmon, pike, flounder, and other kinds are included in the list.

In their classic work,¹ Lartet and Christy reproduce the figure of a fish (thought to be carp) on both sides of a cylindrical piece of reindeer horn from the rock shelter of La Madeleine (Dordogne). Dupont² reproduces the figure of a trout engraved on a baton of reindeer horn from the cavern of Goyet, Belgium. Louis Lartet and Chaplain-Duparc³ found the engraved figure of a pike on a perforated canine tooth of a bear in the Duruthy cave near Sordes (Landes).

The best known example is the group of several salmon in juxtaposition with two stags and a hind, the whole scene engraved on a baton of reindeer horn with the artist's mark (two lozenge-

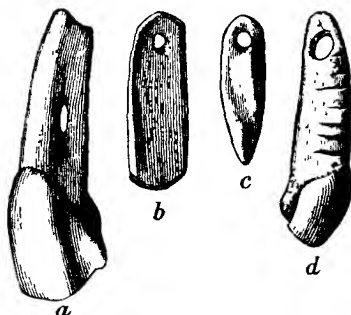


FIG. 20.—Perforated and incised teeth of *Bovidae*; stone and bone pendants. *a* and *d*, Laugerie-Haute; *b* and *c*, Cave of Rey. $\frac{1}{4}$. Yale Univ. coll. cat. nos. 7127-7130.

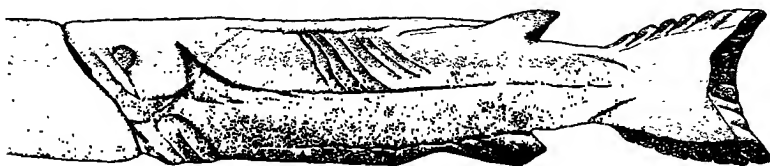


FIG. 21.—Rib bone of a ruminant carved at one end to represent a fish. From the cave of Rey. Original in the National Museum at St.-Germain. After É. Rivière. $\frac{1}{4}$.

shaped figures) affixed. This valuable specimen was found in the cave of Lortet (Hautes-Pyrénées).⁴ Piette reports an additional representation of the fish from the same locality. It is engraved on both faces of a flat piece of bone with the field cut away beyond the contour line (*gravure à contours découpés*).⁵

¹ *Reliquiae Aquitaniae*, B pl. II, fig. 1.

² *Matériaux*, v, pl. 16.

³ *Matériaux*, 2e sér., ix, 101, 1874.

⁴ E. Piette, *L'Anthropologie*, xv, 160, 1904.

⁵ *L'Art pendant l'âge du renne*, pl. x, no. 3.

In the Féaux collection at Périgueux, there is an engraving of a fish on an antler of *Cervidae* from the rock shelter of La Croze-de-Tayac at Les Eyzies, in the same commune as the cave of Rey. This specimen was reproduced by Rivière.⁶

Cartailhac and Breuil⁷ found two figures of the fish (trout) incised in the compact clay of the floor of the diverticulum at the entrance to the Salon Noir in the cavern of Niaux (Ariège).



FIG. 22.—Rib bone of a ruminant carved at one end to represent the body and tail of a fish. Magdalenian from the cave of Rey. ³/₄. Yale Univ. coll. cat. no. 7107.

In the Vibraye collection at the Museum d'Histoire Naturelle, Paris, there is the figure of a pike engraved on the fragment of a reindeer lower jaw that was found at Laugerie-Basse.⁸ Some sixteen other examples of the fish engraved on bone and reindeer horn have been reported from Laugerie-Basse, chiefly by Girod and Massenat.⁹ In one of these, a fish (probably salmon) is associated with the figure of an otter on the same piece of reindeer horn.

A splendid figure of a salmon in low relief was found by Maurice Marsan in 1912 on the ceiling of a little cave at Gorge d'Enfer (Dordogne). This cave, since known as the Grotte du Poisson, was recently purchased by the French Government and listed as a national monument.

Breuil¹⁰ has reproduced javelin points from the cave of Placard (Charente), decorated with stylistic punctate figures, some of which represent the fish. One of them resembles the flounder in shape but the eyes are not indicated. The best representation of the flounder known to cave art is the small

⁶ Assoc. française pour l'Avancement des Sciences, Ajaccio, 1901; Lyon, 1906.

⁷ C. r. Acad. des Inscr. et Belles-Lettres, 213, 1907.

⁸ Paul Girod: Les stations de l'âge du renne dans les vallées de la Vézère et de la Corrèze. Stations Solutréennes et Aurignaciennes, pl. 31.

⁹ Matériaux, XIII, 395, 1878.

¹⁰ Congr. Intern. d'Anthr. et d'Arch. préhs., Geneva, I, 194, 1912.

engraving on bone with contours cut away, which was found recently by Count R. de Saint-Périer¹¹ in Magdalenian deposits of the Grotte des Boeufs at Lespugne (Haute-Garonne). In the Grotte des Harpons, also at Lespugne, he found a piece of bone decorated with engraved figures of a fish, horse, antelope, and bear (head only and viewed from the front). A bone chisel from the cave of La Mairie at Teyjat is decorated with an engraving of a fish.¹²

A representation of a marine fish has been reported¹³ from the cavern of Pindal (Asturias) on the northern coast of Spain. It is engraved on the cavern wall and resembles a Spanish mackerel or tunny-fish in the large crescent-shaped caudal fin, whereas the ventral fin should be placed further forward on the thorax.

Mention should also be made of the engraving of a fish from the cave of Arlay near Lons-le-Saulnier (Jura), reported by Girardot.¹⁴

The engraving of a fish on reindeer horn from Fontarnaud (Labrie collection) is of unusual interest because the fish is represented as biting at something suggesting a barbed hook.¹⁵

In the cave of the Mammoth at Wierzchow, Poland, Zavisza¹⁶ found an engraving of a fish on the rib of a reindeer.

Several mural engravings of the fish are reported by Breuil, Obermaier, and Verner from the cavern of La Pileta (Malaga); one of these is 1.5 m. long and represents a large marine species, probably a plaice or a brill (La Pileta, pp. 37-39, Monaco, 1915).

Breuil¹⁷ found a mural figure of a fish in color at Las Batuecas, Province of Salamanca, Spain. This is the fifth instance to be noted where the fish occurs in parietal or stationary art.

¹¹ Bull. Soc. préh. française, July 25, 1912, pl. I.

¹² Capitan, Breuil, Peyrony, et Bourrinet, Rev. École d'Anthr., XVIII, 169, 1908.

¹³ Alcalde del Rio, Breuil, et Sierra: Les cavernes de la région cantabrique, p. 67, and pl. XLIII, Monaco, 1911.

¹⁴ Assoc., franç. pour l'Avance des Sciences, Besançon, I, 280, 1893.

¹⁵ Breuil, L'Anthropologie, XIX, 190, 1908.

¹⁶ Mém. Soc. d'Anthr. de Paris, 2e sér., I, pl. XII, 1873.

¹⁷ L'Anthropologie, XXIX, 2-27, 1918-19.

A ramus of the lower jaw of the horse found in the cavern of Kostelik (Czecho-Slovakia), by M. Kriz,¹⁸ was so carved as to represent a fish.

Bergougnoux¹⁹ found the representation of the tail of a fish on reindeer horn in the rock shelter of Les Cambous (Lot). The specimen is in the Museum at Cahors.

Cazalis de Fondouce²⁰ reports figures of the fish and horse on bone from the cave of Salpetrière at Pont-du-Gard (Gard).

One of the examples of portable art from the cavern of Trois-Frères (Ariège) is the figure of a fish on bone, found by Count Bégouen.

In his original memoir on the station of Bruniquel (Tarn and Tarn-et-Garonne), Cartailhac²¹ reproduces the figure of a fish engraved on bone from the Chateau rock shelter.

Three examples of the fish have been reproduced from the cave of Mas d'Azil (Ariège). According to Piette,²² one of these, carved from reindeer horn, is represented as having been pierced by a harpoon. The other two examples are on reindeer horn and bone, respectively.

F. Mascaraux²³ found a fish carved from ivory and one engraved on reindeer horn in the cave of Saint-Michel d'Arudy (Basses-Pyrénées).

The latest discovery to be reported is that of E. Passemard²⁴ in the cavern of Isturitz (Basses-Pyrénées). The figure of a fish (trout or salmon) is engraved on a baton. In this case, as in several others, the vertebral column and ribs are indicated by incised lines.

Perforated fish vertebrae were often used as beads during the cave-art period. Rivière reproduces a necklace composed of twenty-four salmon vertebrae from one of the Mentone caves. The remarkable necklace found by Verneau with one of the skeletons (the young man) composing the triple burial at Barma

¹⁸ Mitt. der Anthr. Gesellsch. in Wien, xi, 98, 1881; L'Anthropologie, x, 257-281, 1899.

¹⁹ Les temps préhistoriques en Quercy, 33, 1887.

²⁰ Matériaux, vii, pl. II, 1871.

²¹ L'Anthropologie, xiv, 146, 1903.

²² L'Anthropologie, vi, 284, 1895.

²³ Revue de l'École d'Anthr., xx, 376, 1910.

²⁴ Revue Archéologique, xv, 1-45, 1922.

Grande cave. Mentone, was made up of a happy combination of canine teeth of the deer, univalve shells (*Nassa neritea*), and fish vertebrae. Cave Rey, where Rivière found the two figures of the fish sculptured in bone, also yielded perforated vertebrae of the fish.

One of the batons of reindeer horn found at La Madeleine by Lartet and Christy²⁵ has a marginal decoration closely resembling a series of fish vertebrae in their anatomic relation.

In Europe there are some fifty palaeolithic stations in which harpoons of reindeer horn have been found. These may well have served in fishing for salmon and pike. It is an interesting fact that of the twenty-seven sites above enumerated where figures of fish have been found, harpoons have also been found in at least fourteen, viz., Arlay, Arudy, Bruniquel, Les Cambous, Goyet, Isturitz, Kostelik, Laugerie-Basse, Lespugne, Lortet, La Madeleine, Mas d'Azil, Sordes, and Teyjat. At Teyjat the harpoons and engraving of a fish came from the same Magdalenian level. Some of the other thirteen, Rey for example, were not inhabited during the harpoon-making epoch.

Liveyre.—The shallow cave, scarcely more than a rock shelter, on the property of the Count de Fleurieu, Commune of Tursac (Dordogne) was first noted by Lartet and Christy.²⁶ They stated that it had already been almost completely emptied at a date prior to the memory of the local inhabitants. In the face of such a statement, Rivière deserves credit for having spent several seasons (1900-1904) there and in determining two horizons, viz., Solutréan and Magdalenian. Remains of the mammoth, reindeer, and horse were plentiful in the Solutréan deposit, while the reindeer was dominant in the Magdalenian horizon.

Rivière seems to have been much disturbed by almost nightly vandalism at the cave, especially during the last season's work. A reindeer horn with a superb series of engraved animal figures was said to have been stolen from the site during the night and sold immediately thereafter.

From the Magdalenian level, Rivière obtained a large quantity of flint implements, also tools and weapons of bone and antler

²⁵ Reliq. Aquit., B. pl. iv.

²⁶ Revue Archéol. n. s., ix, 237, 1864.

of *Cervidae*. Ornaments are represented by perforated teeth. Among the stone implements found in the Solutréan level, Rivière makes special mention of a point of quartz crystal beautifully chipped on both faces.

The Yale collection of flint implements from Liveyre includes 76 of Solutréan age and 120 of Magdalenian age. The Solutréan types represented are: (1) points with a lateral notch at the



FIG. 23 —Solutréan flint implements from the cave of Liveyre. ³/₄. Yale Univ. coll cat no. 7166.

base (*pointe-à-cran*), some chipped on one face only and some on both faces; (2) ovate points with a minimum of chipping on the under or bulb face, and somewhat more extended chipping on the upper face (Fig. 23). The list also comprises a pedunculate point of the Font-Robert type, drills, blades, duckbill scratchers, and a few simple gravers. The Magdalenian series is made up largely of gravers, blades, and drills.

Maurice Boursillon²⁷ also seems to have done a little exploring at Liveyre; at least he reported on a small collection that came

²⁷ *L'Homme préhistorique*, p. 39, 1906.

into his possession about 1905, before he had met Rivière. In addition to a few Solutréan flints, Bourlon mentions Magdalenian engravings and implements of bone, figuring two of each. The most important specimens in his collection are: (1) a perforated wolf's tooth; (2) an ivory javelin point with a double bevel at the base; (3) a long (18 cm.) bone javelin point with three poison grooves; (4) a long bone needle with eye; (5) a paint pot made of a fossil shell and partially filled with red ocher; (6) a fine crayon of red ocher; (7) a baton of reindeer horn decorated with a crude engraving of an animal head; (8) a handsome limestone pendant with double conical perforation, twenty-one marginal notches, and the head of a reindeer engraved on one side; and, finally, (9) a perforated pendant of schist with incised animal figures (reindeer, wild goat, and the head, perhaps, of a bison) on both sides.

Laugerie-Haute.—This is one of the classic stations explored by Lartet and Christy in 1863. Later, in their turn came De Vibraye, Girod and Massenat. Rivière, Capitan and Breuil, Hauser, and finally Peyrony who has had charge of the site since it was purchased by the Government for a national monument.

The specimens found by Rivière at Laugerie-Haute and now in the Yale Museum comprise: javelin points and spatulae of reindeer horn, bone needles, a javelin point of ivory, harpoons and a baton of reindeer horn, stone pendants, perforated teeth of *Bos*, the head of a horse engraved on a piece of young reindeer horn, and two mammoths incised on reindeer horn.

Javelin points are of frequent occurrence in palaeolithic stations. Those found at Laugerie-Haute are not unlike the ones reported from Austria, Moravia, Spain, and Switzerland.

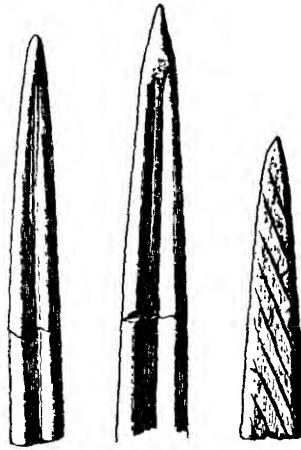


FIG. 24.—Pointed implements of reindeer horn, two with longitudinal groove (presumably for the outflow of blood) and one with small oblique grooves. Bases missing. $\frac{3}{4}$. Laugerie-Haute. Yale Univ. coll. cat nos. 7125, 7126.

Two of the three reproduced in Fig. 24 are provided with a longitudinal groove presumably to facilitate the outflow of blood. Identical examples were found in Gudenus cave, Lower Austria. The third number in Fig. 24 is almost covered by a series of small shallow oblique parallel grooves. The base is missing from all three of the specimens.

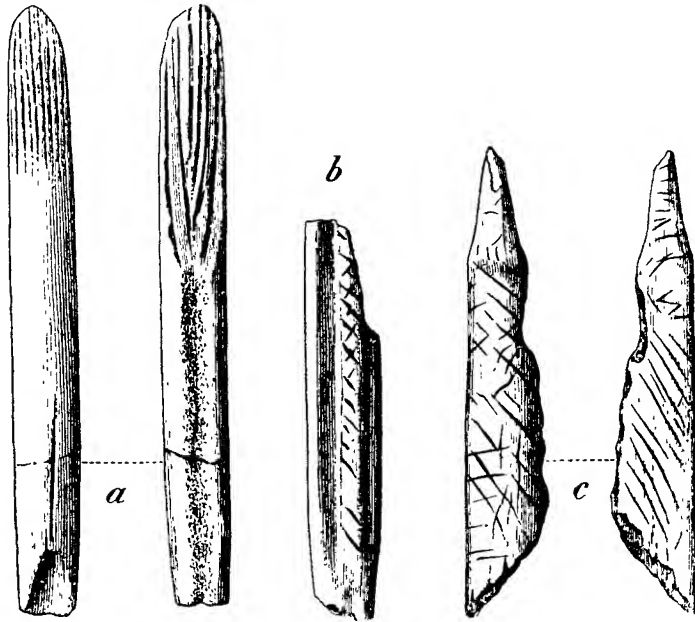


FIG. 25.—Incised implements of reindeer horn from Laugerie-Haute. $\frac{2}{3}$. *a* is a javelin point with flutings at the base; *b* is part of the shaft of a dart thrower. Yale Univ. coll. cat. nos. 7132, 7133, 7131.

Fig. 25, *a*, represents the basal end of a javelin point. The single bevel at the butt (pointing upward) is marked by six shallow grooves gently converging in the direction of the point (missing). The convex unbeveled face at the butt bears parallel, longitudinal incisions. The specimen seen in Fig. 25, *b*, is either the middle section of a javelin head (point downward), or of a dart-thrower near the crochet end (also downward), more likely the latter; for F. Mascaraux found at Saint-Michel d'Arudy (Basses-Pyrénées) a dart-thrower of reindeer horn with identical

decoration, and of approximately the same size. An artificial midrib on the outer face is marked by incisions. Examples similar to Fig. 25, *a* and *b*, have been found in various stations including: La Mouthe (see Fig. 30, *b*), Laugerie-Basse, Brassempouy, Mas d'Azil, and Altamira. Fig. 25, *c*, is an implement of reindeer horn that has been flattened on the inner face. Both faces are marked by series of roughly parallel incisions, with here and there cross incisions especially on the outer face. Near one end there is an artificial protuberance showing only on the outer convex face.

The two spatulate implements of reindeer horn, shown in Fig. 26, bear incisions, some roughly parallel, others zigzag. These were evidently obtained from the Magdalenian horizon. The perforation in an incisor of *Bos* (see Fig. 20, *a*) is placed about half way between the tip of the root and the base of the crown—an unusual

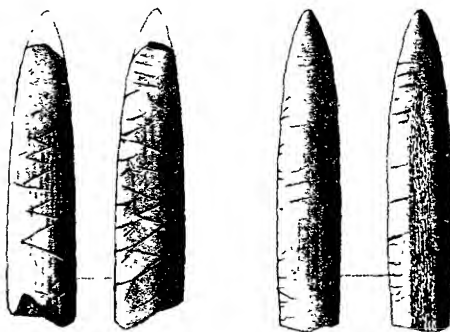


FIG. 26.—Spatulae of reindeer horn with incised decoration. Magdalenian. Laugerie-Haute. $\frac{3}{4}$. Yale Univ. coll. cat. nos. 7135, 7134.

position. The root of a tooth of *Bovidae* (see Fig. 20, *d*) is marked by two series of transverse parallel incisions.

The rock shelter of Laugerie-Haute is poor in art objects as compared with the neighboring station of Laugerie-Basse. In his Repertory of Quaternary Art, Reinach gives 164 examples²⁸ from the latter station and only two from Laugerie-Haute—a baton of reindeer horn with a series of fine stag heads in profile (Peyrony collection) and the engraving of what seems to be a glutton, also on reindeer horn. During the season of 1922, Peyrony found three additional examples of cave art at the latter station: (1) the head of a musk ox (*Ovibos moschatus*)

²⁸ Nearly a score of additional examples were published in 1916 by Bourlon and Breuil.

carved in the round from limestone; (2) bas reliefs on limestone, one of which represents the head of an antelope (early Magdalenian); and (3) engraving of an *Equidae* on limestone (Solutréan). It is therefore a bit of rare good fortune for the Yale Museum to possess two examples from Laugerie-Haute.

One of these is the head of a horse engraved on a piece of young reindeer horn (Fig. 27). The really fine head proportions



FIG. 27.—Fragment of reindeer horn with incised figure of a horse's head. Magdalenian, from Laugerie-Haute. $\frac{1}{2}$. Yale Univ. coll. cat. no. 7136.

are lost in the illustration because the round surface of the horn makes the diameter of the head at the level of the angle of the lower jaw entirely too small. If the head had been copied as it would appear on a plain surface, the effect would be true to

nature and would compare favorably with some of the best known cave figures of the equine head. The muscles of the lower jaw are emphasized in true Magdalenian fashion. The nostril is dilated; hair hangs from the lower jaw just back of the lip region, and incisions, presumably representing hair, occur regionally on both upper and lower jaws. The convex surface of the piece outside the head contours is almost covered by incisions similar to those on the head except that they do not conform to a given plan of orientation. The two long incised lines seem to bear no definite relation to the decoration as a whole.

The head of the horse was a favorite theme with the cave artist. Piette²⁹ reproduces a pair of heads engraved on bone (from Mas d'Azil), similar to the foregoing, and the picture is framed above and below by a herring-bone pattern. The same pattern is found on the lower jaw of the well-known horse head from Saint-Michel d'Arudy³⁰ and also on one from Brassempouy. The head of an *Equidae* engraved on the flat surface of a sacral vertebra, also from Brassempouy, has long hair pendent from

²⁹ L'Anthropologie, XVII, 33, 1906.

³⁰ Idem, *ibid.*, p. 29.

the lower jaw (on the articular face of the same vertebra a seal is represented in low relief). The favorite example is the head of a neighing horse from Mas d'Azil.³¹ Here again the representation of hair and muscles is in the same style as that in the Yale specimen. Sculptured heads of the horse, perforated for suspension and probably employed as amulets, have been found at Brassempouy, Lourdes, and Mas d'Azil.

The other example of cave art from Laugerie-Haute, now in the possession of the Yale Museum, is a representation of two figures of the mammoth incised on reindeer horn. Although fragmentary, both figures are unmistakable. The profile of the larger and better figure, from the tip of the recurved proboscis to the lumbar region, with head and dorsal domes heightened by the deep intervening notch so characteristic of the species *Elephas primigenius*, is especially fine (Fig. 28). The tusks are made to appear as if seen from above instead of in profile. Patches of long hair are indicated on both head and body. The smaller figure is inverted and faces the recurved portion of the other's proboscis. The piece was found in lower Magdalenian deposits under the Leyssalle house, the official residence of Mons. Peyrony since the property came into the possession of the French Government; Rivière had collected the piece prior to 1901, at which time Breuil first saw it and recognized the two figures of the mammoth. After Rivière's death and before the sale of the

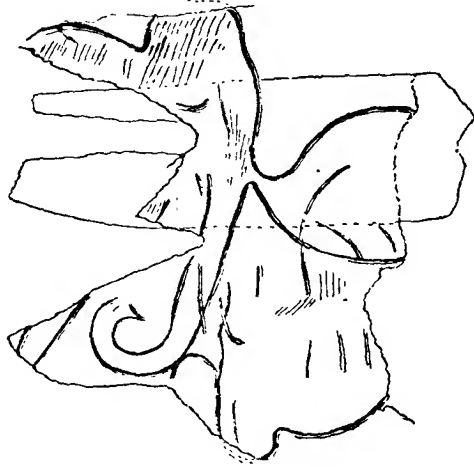


FIG. 28—Fragment of reindeer horn with unrolled engraving of two mammoths. From the lower Magdalenian of Laugerie-Haute. $\frac{1}{2}$. After Breuil. Yale Univ. coll. cat. no. 7138.

³¹ Idem, *ibid.*, xv, 142, 1904.

collection, permission was given to Breuil to make the sketch here reproduced.

La Mouthe.—The story of La Mouthe is inseparably linked not only with the name of Rivière, but also with the first general recognition of parietal cave art in France as of palaeolithic age. In addition to mural art both incised and in color, the floor deposits of the cavern of La Mouthe have yielded important human relics including a decorated stone lamp. The culture sequence of the floor deposits is as follows:

5. Neolithic
4. Magdalenian
3. Solutréan
2. Aurignacian
1. Mousterian

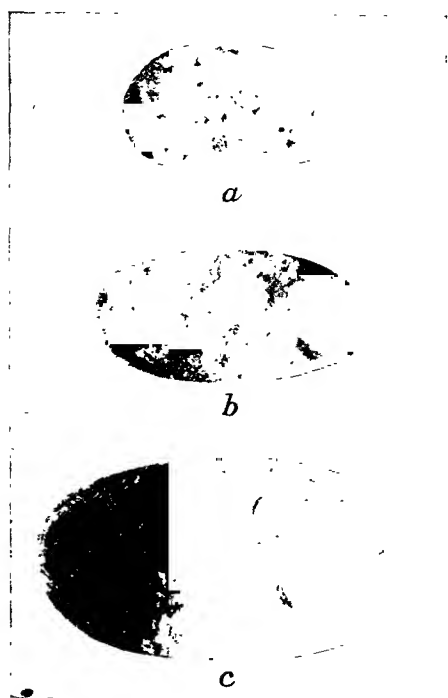


FIG. 29.—Painted pebbles, Azilian Epoch. *a* and *b* from Mas d'Azil; *c* reported to have been found in the cave of La Mouthe. $\frac{2}{3}$. Yale Univ. coll. cat. nos. 7312, 7161.

There is reason to believe that the Azilian epoch may also be represented (between the neolithic and the Magdalenian), for attached to one of the *cartons* purchased for the Yale Museum was a typical painted pebble—a thin flat pebble, oval in outline with red ocher applied along the entire margin and on three spots of one face only. The dimensions are 7.5 by 4.0 by .8 cm. (Fig. 29, *c*).

Other specimens in the Yale collection from La Mouthe are: javelin points of reindeer horn, pointed implements of bone, worked fragments of reindeer horn, bone tallies, bone needles of large size and without eye, perforated canine teeth of

Canis lupus, *Felis*, and *Cervidae*, a bluntly pointed implement of ivory, a crayon of red ocher (Fig. 30, *a*), the beveled basal end of an ivory javelin point (Fig. 30, *b*), two implements of ivory, one of which bears a raised ornamented transverse protuberance and a series of parallel incisions (Fig. 31), and a bone bead. This bead is decorated with four series of transverse parallel incisions (Fig. 32). Two adjacent rows are composed of fifteen incisions each, while the other two, likewise adjacent, are made up of sixteen incisions each. Two pairs of combinations involving comparatively large numbers could hardly have been fortuitous. It would seem as if the cave artist were able to think in sums greater than ten. Zavisza³² reproduces a similar bead (only longer), even to the four series of incisions, made from the leg bone of a wading bird from the cave of the Mammoth at Wierzchow, Poland.

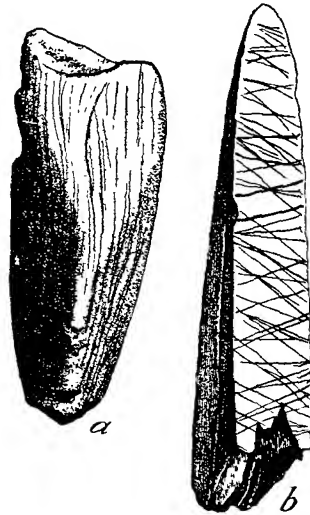


FIG. 30.—*a*, red ocher faceted by scraping; *b*, javelin point of ivory with incisions on flat surface at base La Mouthe $\frac{1}{2}$. Yale Univ. coll. cat. nos 7155, 7154.



FIG. 31—Baguette of ivory, sculptured and incised. La Mouthe. $\frac{2}{3}$. Yale Univ. coll. cat. no. 7153.

An assortment of perforated teeth from La Mouthe is reproduced in Fig. 33. The halving of a canine tooth of the wolf (*Canis lupus*) seems to have been intentional and to have been done prior to the perforation; otherwise the hole would have been run from side to side rather than from front to back. Canines

³² Mém. Soc. d'Anthr. de Paris, 2e sér., I, pl. XII, 1873.

of *Cervidae* (*b* and *c*), and one of *Felis*, probably lynx (*d*), complete the series.

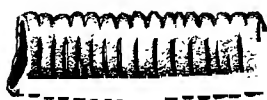


FIG. 32.—Bone bead from the cavern of La Mouthe. Of the four series of incisions, two have 15 each, and two 16 each. $\frac{1}{4}$. Yale Univ. coll. cat. no. 7160.

La Micoque.—The Yale Museum is so fortunate as to possess some of the first specimens ever taken from the important station of La Micoque, Commune of Tayac (Dordogne), discovered by Rivière in 1895 and explored by him and Chauvet³³ in 1896. Since then the site has been explored by Cartailhac, Capitan, Peyrony, Hauser, Wiegiers, et al. La Micoque, a fallen rock shelter, is one of the oldest stations in the Dordogne. The atypic Acheulian horizon at the base is separated from an upper Acheulian horizon by an almost sterile layer of rubbish resembling breccia.

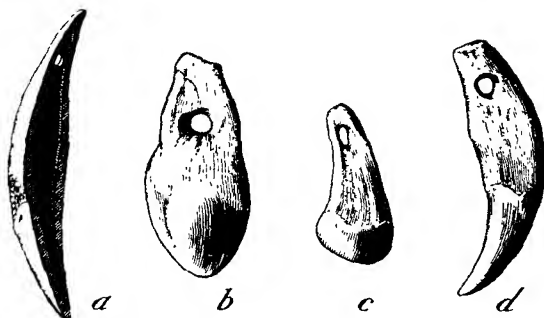


FIG. 33.—Perforated teeth from La Mouthe. *a*, wolf ($\frac{3}{4}$); *b* and *c*, elk ($\frac{1}{4}$); *d*, lynx ($\frac{1}{4}$). Yale Univ. coll. cat. nos. 7159 (*a*, *b*, *c*).

The fauna of the upper level consists almost wholly of horse, *Cervus*, and *Bos* (no reindeer). The Yale collection also includes a lower jaw of the badger (*Meles taxus*). A bone cist in the region of the left canine had caused the bone to break at that point. According to Cartailhac, the horse, *Bos*, and *Cervus* also occur in the lower horizon. Wiegiers is said to have found remains of *Rhinoceros merckii* in this level.

³³ C. r., Acad. des Sciences, Aug. 24, 1896.

The flints from La Micoque are very much altered, chalky in appearance, and friable. The worked flints from the lower level are crude, hardly permitting of classification into the usual Acheulian types. The Yale series from the upper level includes practically every known type: blades, points, side scrapers (*racloirs*), and cleavers (*coups-de-poing*). Some of the cleavers are unusually small with delicate retouches on one or both faces, but relatively thick at the base. The finest and largest example is the lanceolate cleaver reproduced in Fig. 34. Chips have been removed from the entire surface of both faces except for a small bit of nodular crust near the base. The piece may well be chosen as the Micoque type of cleaver.

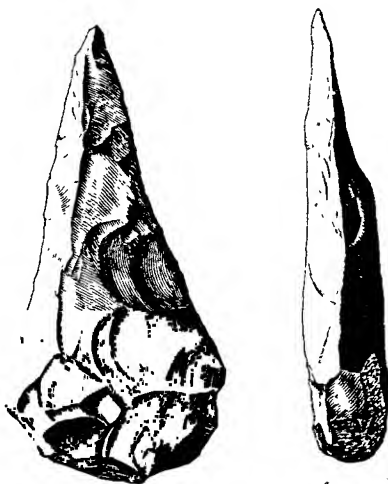


FIG. 34.—Flint cleaver from La Micoque (Dordogne), Upper Acheulian. $\frac{1}{2}$. Yale Univ. coll. cat. no. 7169.

YALE UNIVERSITY,
NEW HAVEN, CT.

BOOK REVIEWS

METHODS AND PRINCIPLES

Language; an Introduction to the Study of Speech. EDWARD SAPIR.
New York: Harcourt, Brace & Co., 1921. vii, 258 pp.

Three distinct types of public may be considered by the writer of a treatise on the fundamentals of language—the nondescript general reader, the ethnologist, and the specialist in linguistics. It is true that since few ethnologists are more than laymen in the field of language, the first two classes largely coincide. Nevertheless, the theoretically-minded students of culture will view linguistic phenomena with a peculiar interest and must inevitably draw some parallels between the problems arising in this sharply demarcated province of the social heritage and in the grand totality of culture; and accordingly they may be legitimately reckoned of a separate category.

In the reviewer's opinion Dr. Sapir felicitously solves the problem of appealing to this triple audience. Regarded from the point of view of the laity, his book represents a remarkable achievement in popularization on a very high plane. Relying to an appreciable extent on examples culled from English speech, he succeeds in illustrating the more important processes operative in the history of language. Even the complete novice, provided he is willing to devote some concentrated thinking to the task, will gain a considerable insight into the psychological and historical determinants affecting the growth of speech-forms. He will probably learn with astonishment what far-reaching changes in morphology can be initiated by a sound-shift; and with presumably even greater amazement, how varied are the means by which thought may be symbolically represented in speech, what totally different aspects of reality may be singled out for distinction by different languages. New vistas of another order are likely to rise before him: the relations of thought and speech, of literary style and its linguistic basis, will appear in a new light, while time-honored fallacies, such as those of a close connection between race and language, or between linguistic types and definite stages of civilization, will fade away.

The theoretically minded ethnologist will find many of his own problems illustrated in novel fashion within the linguistic field—especially so far as they belong to the historical category. Is there such a thing as orthogenetic evolution in culture? Well, in its linguistic compartment, at any rate, Dr. Sapir discovers a definite “drift”—a tendency, moreover, that may persist in languages long after their separation from the parental stock (p. 184), though certainly there is no mystic agency that impels speech towards a predetermined goal: English may become more and more analytic without assuming the character of Indo-Chinese (p. 180). Of tremendous significance in the light of the blatant proclamations of Professor Elliot Smith and the Graebnerian school, are the author's observations on linguistic parallels. Speaking of the principle of concord as noted in Chinook and Bantu, he remarks (p. 122):

It is impressive to observe how the human mind has arrived at the same form of expression in two such historically unconnected regions.

Again (p. 152 f.) he discovers noteworthy similarities between Takelma and Greek,

languages that are as geographically remote from each other and as unconnected in a historical sense as two languages selected at random can well be.

Quite generally, we are told that

broadly similar morphologies must have been reached by unrelated languages, independently and frequently (p. 128);

through what elusive instrumentalities remains a question for the future. But as their variety demonstrates, the formal patterns of languages are quite arbitrary, as much so as, say, certain mythological conceptions; and what applies to the one department of culture must be held to obtain for the other until the champions of the “historical” schools deign to prove the contrary. Those of us, therefore, who while fully alive to the importance of diffusion are not convinced of the impossibility of independent evolution in a limited way will take no small comfort from Dr. Sapir's findings. Another side of his historical thinking will be discussed below.

Speaking tentatively and under correction concerning the professional linguist's attitude, I feel that his attention will be arrested by a number of distinctive features in the book before us. First of all, it has a definitely anthropological orientation. Dr. Sapir, starting from a mastery of the philological technique elaborated and perfected in the Indo-Germanic domain has extended its principles through

original field-studies to the languages of American Indians, while simultaneously keeping abreast of the corresponding labors of, say, Meinhof in Africa and of Father Schmidt in the Southeast Asiatic field. The significance of this characteristic becomes clearer when we compare Dr. Sapir's volume with its namesake, still more recently published by Professor Jespersen. There is much sanity in the few pages the Danish scholar devotes to the tongues of primitive peoples, but after all they provide only the border embellishment for the fabric of his philosophy of speech. His ideas, in other words, were formed by researches in the familiar channels and merely found subsidiary exemplification in more exotic spheres. Sapir's views, on the contrary, are cast in a single mould; they are the outcome of a broad-gauge survey of language as such, whether spoken by primitive or lettered peoples.

It must, accordingly, be of peculiar interest to students of language to familiarize themselves with the more general notions evolved on the basis of so wide an inquiry as underlies this little book, even though its space limitations allow no more than a brief exposition, precluding scientific demonstration. Two points merit special attention—the author's classificatory scheme, and his views on the interrelations of distinct languages.

As for the former, it may again be well to contrast Sapir's book with Jespersen's. Jespersen no less than Sapir rejects the traditional tripartite scheme of isolating, agglutinative, and inflectional categories (*Language*, pp. 76–80) but his conclusion that “the structural diversities of languages are too great for us to classify them comprehensively” bears the unsatisfactoriness of all unqualified agnosticism. Sapir, proceeding from a provisional to a revised tabulation of the concepts denoted by grammatical processes (pp. 92 f., 106 f.), groups languages according to their expression of these concepts. The basic query he propounds is, whether a language keeps “the basic relational concepts . . . free of an admixture of the concrete”; and this leads to a dichotomy into pure-relational and mixed-relational languages. Each of the resulting categories is, then, subdivided into a simple and a complex class, these sub-types being distinguished by the absence or the use of inseparable elements in building up concrete ideas. The conventional terminology, however, is not wholly discarded but merely degraded to the rank of an auxiliary device for characterizing an agglutinative or other trend.

I confess myself wholly incompetent to appraise the value of this scheme, which I must add in justice to its author is put forward in

quite undogmatic fashion (p. 153). However, I am impressed by the provisional historical evidence cited in favor of the proposition that we are here dealing with phenomena coming nearer the essentials of speech than those envisaged by earlier classifiers and I shall eagerly await the verdict of those entitled to a professional judgment. Should Dr. Sapir's views stand sustained, it is quite clear that they would constitute a landmark in the progress of linguistic science.

Finally, a word or two must be devoted to Dr. Sapir's ideas on historical relationships. To put the matter briefly, he accepts of course the borrowing of foreign words, admits the diffusion of phonetic features "over a continuous area in somewhat the same way that elements of culture ray out from a geographical center" (p. 213), but finds no historical evidence for any but superficial outside influences on morphology (p. 217). This, however, leads to a dilemma, for as a matter of fact important structural traits are distributed over major areas, where they are shared by languages differing so widely as to be reckoned genetically unrelated by orthodox science. Dr. Sapir contends that while some resemblances may be interpreted as due to independent evolution, as set forth above, this explanation no longer holds when the parallels are of too specific a nature. In that case it is necessary to revise the received classification and to shift the boundaries staked out for linguistic families, in other words to regard as genetically connected certain stocks hitherto treated as distinct. Our guide in the re-formulation of the historical grouping must be "contrastive perspective"—the comparative weighting of similarities and dissimilarities obtaining among a series of progressively more divergent languages (pp. 217--220).

It must not be supposed that the somewhat heretical position maintained by Dr. Sapir on historical interrelationships is put forward in obtrusive fashion. Those who know how definitely he adheres in more technical publications to the view outlined will admire the self-restraint exercised in compressing deep-seated convictions within the narrow compass of three pages. Such reverence for the general reader is not common among writers of popular works. This reserve, however, is only typical of the entire book, which is noticeably free from crotchetyness. Indeed, rarely is such freshness of outlook coupled with such judgment and taste. An Attic flavor pervades the volume as a whole. I know of no general work put forth by American anthropological scholarship of which we have more reason to be proud.

ROBERT H. LOWIE

AMERICA

The Archeological History of New York. (Bulletins 235, 236 of the New York State Museum, Albany, 1920.) ARTHUR C. PARKER.

In order to appreciate the significance of Mr. Parker's latest contribution to our knowledge of the archaeology of New York, something of the history of the developments in that field should be taken into consideration.

New York has always been a region fascinating to the student because within its boundaries lie the greatest part of the remains of that important body of aborigines, the historic League of the Iroquois. In earlier days Squier, Hough, Morgan, and Clark did important work on the antiquities of the State, but they were unable to distinguish between the various types of artifacts or of cultures encountered. It was not until 1897, when the dean of Eastern archaeologists, Dr. Wm. M. Beauchamp, brought out the first of his splendid series of publications, the *Archeological Bulletins of the New York State Museum*, that we find, in his "Aboriginal Chipped Stone Implements of New York," the first suggestion that more than one type of culture occurs in the region. Dr. Beauchamp made it plain that certain types of articles, notably the polished slates, are non-Iroquoian in origin, although he was obviously in doubt to whom to refer them, suspecting also that they are non-Algonkian. Dr. Beauchamp likewise recognized the possible existence of a culture resembling that of the Eskimo, and of a possible mound culture. He also, in 1898, called attention to the peculiarities of certain forms of Iroquois pottery, both in New York and Canada.

In 1909 the writer, in a paper entitled "Archeology of the New Coastal Algonkin," Vol. III of the *Anthropological Papers of the American Museum of Natural History*, first gave a definitive account of the typical Algonkian remains of the tidewater region. Later, stimulated by articles on Iroquoian archaeological criteria published simultaneously and independently by Parker and Houghton in the *American Anthropologist* for October-December, 1916, he brought out in 1919 a pamphlet on "The Pre-Iroquoian Algonkian Indians of Central and Western New York," Vol. II, No. 1, of the *Indian Notes and Monographs of the Museum of the American Indian, Heye Foundation*. This paper extended the area of Algonkian occupation and established a series of criteria for the identification of Algonkian sites.

While this work was going on, Mr. Parker, then for some years past State Archeologist, was busily engaged in Iroquois research, but, owing to discouraging conditions, he was in several cases unable to bring his results before the public in time to secure the honor of their discovery. Indeed, the very publication under discussion was itself so delayed that many of his original contributions may appear to those unaware of his difficulties as reiterations of facts already known.

Mr. Parker's first attempt to illustrate cultures in the State Museum was in 1907, but it was not until the new Museum building was completed in 1912 that he was able to make an exhibit explaining and differentiating these. Mr. Parker is therefore one of the first to identify, separate, and describe New York artifacts according to the culture complexes into which they fall. The *Archeological History of New York* was in preparation as early as 1916 and had to be submitted by December 30th, 1917. Delayed by a printers' strike, it did not actually appear until July, 1922, but owing to publication rules, Mr. Parker could not add a single line to the manuscript after its acceptance for publication.

The *Archeological History of New York* is divided into two volumes of which Part I is devoted to the culture horizons and a series of accounts of the intensive exploration of certain typical sites from each occupation.

Mr. Parker describes four principal cultures, the Algonkian, Eskimoan, "Mound-builder," and Iroquoian, and gives criteria for the determination of each. As a matter of fact these cultures are in several cases susceptible of further subdivision; the Algonkian, for example, is divided into: first, archaic, based on the artifacts found in the deposits occurring in lower layers of rockshelters and shellheaps, where pottery is missing or rare; second, middle Algonkian, where artifacts of pure Algonkian type occur; and third, late Algonkian, when Iroquoian influence begins to manifest itself, this period extending up to and beyond the colonization period.

It is during the middle Algonkian period that these people reached their highest development and greatest distribution, the typical artifacts being found beyond the boundaries of New York throughout the Middle Atlantic States, the greater part of New England, southern Ontario, Michigan, Wisconsin, and Minnesota, and thence indefinitely southward, our data for the region from the Ohio Valley south being very meager. In New York State the Algonkians were expelled from the central portion on the arrival of the Iroquois, while

those on the coast received a certain stimulus to work in bone and clay, but stonework, in which the middle Algonkians were masters, decayed. There are also variations in culture between the inland and coastal Algonkians of New York.

Algonkian culture overlaps with the Mound Builder culture as found in New York, there being a decided similarity in the polished slates, chipped flints, and some of the other artifacts in stone and copper found in both. It may be said in fact that Algonkian and Mound cultures present far more points of contact with each other than does either with the Iroquoian.

The Eskimoan culture is undoubtedly an ancient one in New York, but its exact chronological sequence is not yet determined. It may indeed be a local phase of Algonkian of the archaic type. Even recently those northern Algonkians in touch with the Eskimo on the shores of Hudson Bay imitated the characteristic polished slate woman's knives and other articles of the latter.

As Mr. Parker indicates, Iroquoian culture is divisible into a number of local areas, and also into chronological periods. He points out the interesting fact that characteristic Iroquoian sites with their distinctive culture are not only comparatively rare during the pre-historic period, but the earliest known sites tend to blend with those of the Middle Algonkians. This may serve to explain the paucity of early Iroquoian sites outside of the type areas in New York and Ontario, on the basis that the marked Iroquois culture, as we know it, developed after their arrival in their historic seats. Mr. Parker advances the theory that the change was a conscious and deliberate one, fostered by the people in order to set themselves off from their Algonkian neighbors. Mr. Parker backs his theory with historic instances, and it seems perfectly sound and tenable to the present writer.

The rest of Volume I is devoted to a series of papers descriptive of intensive fieldwork on various sites, many of them hitherto undescribed. It is an interesting and important section, and well illustrated. Mr. Parker concludes with some notes on archaeological subjects which are of interest.

Volume II is composed of a list of archaeological sites in the State of New York, and is the weakest part of this monumental work. The list closely follows that published by Beauchamp in 1900, even repeating most of the errors contained in that pioneer attempt. The data are brief, often entirely too brief, and while the volume is not

without merit, one cannot help feeling that the author's interest lies elsewhere. The identification of some of the sites, especially those in Cayuga County, is often erroneous, as the reviewer knows from personal experience.

All in all, this is the most ambitious and best paper hitherto published on the archaeology of the region and is likely to stand as such for many years to come. It sets a standard of merit that American scientists may well follow in the study and discussion of the archaeology of any part of our continent. The State of New York is to be congratulated on having so able and erudite a student of its early inhabitants as Mr. Parker, who has proved by the present volumes that he is not only the foremost exponent of Iroquois archaeology and ethnology, but that he also has a thorough conception of the principles of Algonkian, Eskimoan, and Mound Builder culture.

ALANSON SKINNER

Inca Land, Exploration in the Highlands of Peru. HIRAM BINGHAM.
Boston and New York: Houghton, Mifflin, & Co. 1922. 365 pages.

This, the latest publication by Professor Hiram Bingham, is a very notable contribution to our increasing knowledge of Andean history. In parts it is geographical, in other parts archaeological, in still other parts ethnological, and as a whole it is of interest to all sorts of anthropologists.

The first four chapters, pages 1 to 94, are predominantly geographical in character, being vivid, yet accurate, descriptions of the country in southern Peru. Especially entertaining, yet not lacking in serious interest, is the description of the reputedly "bottomless" Flamingo Lake, which turned out to be fifteen feet deep in its deepest part (pp. 74-77).

Chapter V, pp. 95-109, entitled "Titicaca," contains some very valuable notes on the ruins of pre-Incaic date which abound in the vicinity of Lake Titicaca. Particularly praiseworthy are the remarks concerning the absurd notions of Herr Posnansky of La Paz (pp. 98-100). In this same chapter are some valuable data on the present condition of the Indians in that district.

In Chapter VI, pp. 110-132, "The Vilcanota Country," ethnological data are found again, together with archaeological, historical, and geographical. The name, it should be noted, ought to be written "Vilcañota," the ñ being too often lost to sight by American writers. Very noteworthy is the lower of the two pictures facing p. 120, for it

shows Indian men and women tilling the soil in precisely the same way that we see them in the inimitable pictures which adorn the manuscript of Felipe Guamán Poma de Ayala, written in or prior to 1613. Notable again is the picture of the temple of Viracocha at Racche, described on pp. 129-132. It is the highest wall of any age in Peru. Unfortunately it is fast tumbling to pieces.

Chapter VII, pp. 133-156, "The Valley of the Huatanay," describes some minor archaeological sites in the neighborhood of Cuzco. But this chapter is especially creditable to its author on account of the fact that in it he makes a very frank avowal of past errors committed by him and others in connection with certain bones which were found in a gully near Cuzco. Prof. Bingham, some eight or ten years ago, was very much laughed at on account of his claim that those bones were as many as 40,000 years old. The wish was father to the thought. Now, after clearly presenting the evidence bearing upon the matter, Prof. Bingham candidly admits that his "Cuzco Man" is only 200 years or so old. If scientists would always be so manly in confessing their mistakes, we should get along more rapidly.

Chapter VIII, pp. 157-169, "The Oldest City in South America," is a brief description of modern Cuzco, a quaint and charming city made quite unique by its peculiar blending of ancient and new, Indian and European elements.

Chapter IX, pp. 170-197, "The Last Four Incas," is a succinct account of the four post-Conquest "Incas," Manco, Sayri Tupac, Titu Cusi, and Tupac Amaru I. They lived and wrought between 1534 and 1572. Of these four, the first was the most gallant and daring, the last the most pathetic. Sayri Tupac and Titu Cusi were relatively nonentities. To some it will seem somewhat sarcastic on Prof. Bingham's part to hail them all as Incas. It is true that Manco, as a legitimate son of the great Inca Huayna Capac, and crowned as a puppet sovereign under Spanish auspices, did partake to some extent of that character of Incaship which his ancestors had worn. But all the others were hardly more than refugees and pretenders grasping feebly the shadow of once solid power. Bingham's description of the events of this period in Peruvian history is excellent, though one cannot help wondering why he persists in quoting Rycaut's edition of Garcilaso de la Vega instead of Markham's. The only advantage of the former is that its spelling is more quaint than that of Markham. It is also somewhat odd that, on p. 184, Prof. Bingham should repeat a misspelling of the Spanish name "Melchor," writing it *Melchior*.

Were it not for the general high level of excellence of the book these minor points would not be conspicuous.

Between pp. 186 and 187 is a large two-page photograph of the Yucay valley. Of all the magnificent photographs which we have been given during many years past by Dr. Bingham this is one of the finest. More than that, it is also one of the most useful, for it shows to anyone desirous of knowing, all the chief features of a typical highland valley in the Andes, and it teaches more than do a score of pompous monographs loaded down with maps and diagrams.

Only in 1572 was the downfall of Tupac Amaru I brought about by the redoubtable Viceroy Don Francisco de Toledo. To his everlasting disgrace, Toledo caused, quite unjustly, the death of the young Inca, a death not avenged until more than two centuries later, when Tupac Amaru II led the first systematic war against Spanish rule in Peru.

Chapter X, pp. 198-216, "Searching for the Last Inca Capital," Chapter XI, pp. 217-240, "The Search Continued," and Chapter XII, pp. 241-254, "The Fortress of Uiticos and the House of the Sun," may be considered together. They describe the search for and finding of the last refuge, stronghold, or "capital" of the Incas.

On pp. 202-203 is a passage about the pigheadedness of certain types of Peruvians, official and otherwise. The passage is timely, and is notable for its moderate language, concealing more indignation than it expresses.

One cannot help regretting that Dr. Bingham did not devote a paragraph or two in this Chapter X to a description of the interesting fortress of Huata, half way between the Anta valley and the Urubamba valley. That fortress, visited in 1914 by the Yale Expedition, is of great importance. On p. 207, Dr. Bingham refers to, but does not name, the interesting ruins of Piñasñiyoc. On pp. 209-211, however, he gives some valuable data on the ruins of Salapunco, some leagues downstream from Ollantaytambo. At p. 210 is a splendid photograph of "Grosvenor Glacier" which provokes a query as to whether Anglo-Saxon names are applicable to Quichua phenomena. One notes with pleasure, on p. 211, that Dr. Bingham intends to describe in a later volume the ruins which abound near Qquente, on the left bank of the Urubamba River below Salapunco. The remainder of the three chapters under consideration is extremely important and of great interest to archaeologists and historians, as well as to geographers and to business men in search of undeveloped resources.

Chapter XIII, pp. 255-265, "Vilcabamba," is especially notable on account of its description, p. 256, of the early Spanish town of Vilcabamba.

Chapter XIV, pp. 266-291, "Conservidayoc," and Chapter XV, pp. 292-305, "The Pampa of Ghosts," contain interesting archaeological and ethnological data.

For many the chief interest in the book will focus upon its three final chapters, Chapter XVI, pp. 306-313, "The Story of Tampu-Tocco, a Lost City of the First Incas," Chapter XVII, pp. 314-325, "Machu Picchu," and Chapter XVIII, pp. 326-340, "The Origin of Machu Picchu."

In brief these chapters may be said to contain the story of a loss that never happened and a find that was never found. Dr. Bingham suffers from a lack of interest in anything that is not hoary with age. He begins his yarn by summarizing the material contained in Montesinos's *Memorias antiguas* regarding the pre-Incaic history of Peru. Then he offers us, with extraordinary solemnity, a digest of the legend of Manco Capac, whom Gonzalez de la Rosa proved to be mythical, and of Manco's legendary "three-windowed" wall, mentioned by Salcamayhua, who wrote so late as 1620. That wall was reputed to exist in a place called Tampu-toco, "Window-tavern." Then Dr. Bingham proceeds to identify Tampu-toco with an important late-Inca and post-Conquest site dubbed "Machu Picchu." In order to substantiate his theory, Dr. Bingham had to find a wall with three windows in it. Such a wall was found at Machu Pichu. But Dr. Bingham here maintains silence as to the fact that the original number of windows in that wall was five, not three. This is fatal. Worse still is the fact that Dr. Bingham deliberately ignores part of the evidence brought to bear by Dr. George F. Eaton, and all of that offered by the late Sir Clements Markham, by Max Uhle and by myself, as to the harsh reality: that Machu Pichu is a recent erection. I hope eventually to publish, as I have permission to do, Sir Clements's letters to me on this subject. They are diverting and important.

With the single exception of his failure to admit frankly his errors regarding Machu Pichu, Dr. Bingham has given us a book which is well-nigh faultless. It is beautifully written, and its illustrations will be indispensable to students for many years to come.

PHILIP AINSWORTH MEANS

OCEANIA

Argonauts of the Western Pacific. An Account of Native Enterprise and Adventure in the Archipelagoes of Melanesian New Guinea. BRONISLAW MALINOWSKI, Ph.D. (Cracow), D. Sc. (London). With a Preface by Sir JAMES GEORGE FRAZER, F. B. A., F. R. S. With 5 maps, 65 [66] illustrations, and 2 figures. London: George Routledge & Sons, Ltd. New York: E. P. Dutton & Co., 1922. xxxi, 527 pp.

Argonauts of the Western Pacific is perhaps one of the most remarkable of recent contributions to the science of anthropology. It deals primarily with one phase of the culture of the Trobriand Islanders, a Papuo-Melanesian people. That phase is the *kula*—the ceremonial exchange of shell bracelets or arm shells and of necklaces of shell discs. Dr. Malinowski has succeeded in presenting a vivid account of the *kula*, not torn, however, from its original setting, but carefully surrounded by its full cultural environment.

The ceremonial exchange is of especial interest as international relations are involved, the exchanges being made between peoples speaking different languages as well as between neighbors speaking a single dialect. A considerable number of islands off the eastern end of New Guinea are united in this ceremonial exchange, forming what the author aptly designates the *kula* ring. Along this ring the necklaces of red shell discs move in a clockwise direction. In the opposite direction move the white arm shells. Arm shells are exchanged for necklaces and vice versa. The individuals who acquire these objects do not retain them permanently, but after a longer or shorter period exchange them. Furthermore each individual has one or more partners both to the right and to the left of him in the *kula* ring. From the partners on one side he receives necklaces and to those partners gives arm shells. From the partners on the other side he receives arm shells and to those partners gives necklaces.

Magic enters into the proceedings at every turn and Dr. Malinowski gives an abundance of formulas; in fact he makes it obvious that magic plays a most important rôle in the whole of Trobriand culture, to say nothing of its preponderating importance in *kula* transactions.

The author devotes himself almost entirely to the presentation of facts bearing on the *kula* exchange. He deliberately avoids the

realm of hypothesis. In fact he cautiously refrains from even expressing his opinion as to the probable origin of the *kula*.

As to the respectable antiquity of the *kula* institution, Dr. Malinowski adduces a number of myths, which, however, are not incontrovertible evidence, considering the rapidity with which such tales arise. Moreover, the type of *kula* myth, the ease with which the *kula* has been abandoned in certain communities in favor of pearling, and the fact that procedure closely approximating the *kula* magic is followed by some communities for non-*kula* exchange give the reader the feeling that the *kula* is the "flower of the plant" and not its root; that it belongs in the relatively late stratum rather than relatively early stratum of social phenomena in the Trobriands.

Throughout his book Dr. Malinowski endeavors most faithfully to view matters through the eyes of his native informants. Whether or not he has succeeded in entirely eliminating the subjective from his book is of course open to question. It is certain, however, that he has set a high standard along these lines. His whole book beams with the refreshing zeal and enthusiasm of one who earnestly aims to portray without bias all that he has seen and at the same time to present the emotions of the participants. It is in short a psychological as well as an ethnographical study.

On the whole the reader cannot fail to be impressed with the minutely painstaking style in which the author presents his material. The book is most carefully cross-referenced in a manner which will appeal to the student.

On one point of style I feel that the author is open to stricture from his professional, but not from his lay, readers. Throughout the book he dwells frequently and at great length on ethnographical method, a feature that the professional anthropologist will perhaps regard as pedantry; for the author sets forth those matters of method which must be obvious to every properly trained ethnologist. The layman on the contrary will perhaps welcome the lengthy expositions of method and the numerous cautions which meet one at every turn, for they will give him a clear insight into the field methods of the ethnologist.

From the editorial and typographical standpoint *Argonauts of the Western Pacific* maintains a standard quite compatible with the fine anthropological achievement of its author.

EDWARD W. GIFFORD

AFRICA

Harvard African Studies, Vol. III; Varia Africana. III E. A. HOOTON, NATICA I. BATES, editors; RUTH OTIS SAWTELL, assistant editor. The African Department of the Peabody Museum of Harvard University: Cambridge, Mass., 1922 ix, 374 pp., 23 pls.

This latest volume of the *Harvard African Studies* rivals its predecessors both in the excellence of its get-up and the scientific value of the material presented. The latter comprises two very short and two long articles, the former including the late Professor V. Giuffrida-Ruggeri's contribution on "The Actual State of the Question of the Most Ancient Egyptian Populations" (pp. 3-7) and Professor C. Peabody's "Note on Prehistoric Collections from Northwest Africa in the Peabody Museum of Harvard University" (pp. 373-374). The remainder of the volume is devoted to a monograph on "The Folk-Literature of the Galla of Southern Abyssinia" by Dr. Enrico Cerulli (pp. 9-228), and another on "The Wayao of Nyasaland" by Dr. Hugh Stannus (pp. 229-372).

Dr. Cerulli's paper will interest all students of comparative literature. It provides native texts in one of the northern Galla dialects (Máččā), a translation, and explanatory notes. A variety of literary products is exemplified: there are both poetical and prose compositions, the latter including proverbs, riddles, historical narratives, and two brief specimens of Galla humor. The last-mentioned form of story is said to be cultivated by professional jesters maintained at the small courts. On the whole, the songs are of the greatest literary interest. Here, too, there is much heterogeneity; there are war and hunting, love and nuptial songs, pastoral and religious poems. The author calls attention to the occurrence of sound parallelism as a frequent feature of Galla poetry and to the fact that the bards, apparently intoxicated with the device, introduce at times quite meaningless verses for the sake of the jingle (e. g., p. 68, lines 12 and 13). This subject certainly merits fuller treatment. It is not clear from a cursory inspection of the texts what place genuine rhyme plays in Galla poetry—to what extent and between what lines it is deemed desirable, to what extent assonance is considered a proper equivalent, whether there is any discrimination against the exact repetition of the final words or syllables of parallel lines (I suspect there is not). Our curiosity is also roused by the combination of rhyme between the initial as well as the terminal words in two verses,

as on p. 108, text 84. The style itself has a peculiar quality of pithiness not lost even in translation. Thus, one love song reads as follows (p. 115):

A javelin without blood is not a javelin!
Love without kisses is not love!

It seems more than likely that we are confronted with a definite influence of Arabic culture on both form and substance of Galla literature, a suggestion that also occurred to my colleague, Professor H. F. Lutz. To trace this influence in detail would doubtless be a fascinating task for one possessed of the requisite linguistic equipment.

Two sections of Dr. Cerulli's contribution will interest those more particularly interested in ethnography—the account of Galla initiation rites (p. 167 et seq.) and the Appendix devoted to the Wáttā pariah caste (pp. 200–214).

Dr. Stannus's amply illustrated paper deals with that part of the Amachinga subdivision of the Yao ruled by chief Malemya. Since it presents a systematic survey of the whole culture, only a few points can here be singled out for special mention. First, as to sociology (esp. pp. 232–236) the early separation of children of both sexes from the parental roof is interesting: the boys live together in a big dormitory, the girls either sleep together in a corresponding hut or stay with their grandmothers until taken in marriage. The Yao are a characteristically matrilineal people; the bridegroom normally marries into his wife's village, the children inherit their mother's clan name, and succession to the chieftainship descends from uncle to sister's son. Whether as a correlate of the services connected with matrilocal residence or for some other reason, no payment is made for the wife—assuredly in marked contrast to the usage of many Bantu tribes. Normally enough, the clan is exogamous, but the sororate in either form is tabooed and a man is prohibited from taking to wife the sister of his brother's wife. The statement concerning the sexual division of labor is interesting in several ways: women, as almost always in primitive society, manufacture pottery, while the men, as seems the rule in Africa as contrasted with Polynesia, make bark cloth; as for horticultural activity, together they hoe and together they harvest, but to the woman falls the monotonous drudgery of pounding and sifting the corn flour.

With regard to Yao totemism, which, if I remember correctly, remained an obscure question at the time of Ankermann's meritorious

statistical study of the relevant African phenomena, we are told that there are only a few clans bearing animal names and "practically no clan food taboo" (p. 266). Some valuable data are given concerning kinship terminology, but the author exhibits the naïveté customary among those not specializing in this field when he expresses surprise at the extremely usual classification of parallel and cross-cousins (p. 282), which is correlated with the common discrimination as to marriageability. However, though cross-cousin unions are permitted, they are infrequent "as it is said such marriages are always unhappy." The ample account of boys' and girls' initiation rites (pp. 246-277) merits close study and comparison with Weule's description.

Amachinga religion conforms in its broad outlines to the general beliefs and practices of the Bantu, or indeed of other African natives as well. Sorcery, divination, and ancestor worship are all prominent, and there is a belief in a very ill-defined supreme being who takes little interest in the affairs of mortals but receives the spirits of the departed (p. 312 f.). Spirits may reveal their wishes by possession of the living, in which case a woman invariably plays the medium's part (p. 316). The use of ventriloquism by diviners in extracting answers from their gourd apparatus is an interesting detail (p. 303 f.), likewise the employment of the vapor bath in therapeutics and exorcism (p. 290):

Over a pot of water in which have been dropped herbs and stones heated in a fire, the patient squats enveloped in a blanket and is thereby subjected to the action of the medicated steam.

The foregoing notes must suffice for the purposes of this review. It is evident that the new addition to the Harvard series is not only indispensable to the Africanist but contains a vast amount of valuable information for the comparative ethnologist.

ROBERT H. LOWIE

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DISCUSSION AND CORRESPONDENCE

IN REPLY TO FATHER MORICE

ON pages 385 to 390 of Volume 24 of the *American Anthropologist*, Father Morice has with delightful irony and sarcasm replied to my review of his recent volume entitled *Essai sur l'origine des Dénés de l'Amérique du Nord*. The major portion of his remarks is devoted to a somewhat vigorous refutation of the statement which he declares me to have made, that he "believed the Indians to be the descendants of the Lost Tribes of Israel." I have no desire to enter into any controversy, but feel obliged in self-justification to point out that his whole charge is quite baseless for I neither said nor in any way implied any such thing. Father Morice has quoted the last lines of my first paragraph, in which I said that he turns "at last to the mirage of the Lost Ten Tribes, and finds in this the final solution of many of his troubles"; he however *omits* to quote or mention the words of the immediately preceding sentence, in which I had said that he "attempts to demonstrate the Asiatic origin of the present Déné culture," or the last words of the following paragraph where I stated that "he ascribes to these (i.e. the Lost Ten Tribes) the origin of many of the cultural elements among the Déné." In each case I referred explicitly to *culture only*; I nowhere even suggested actual descent.

Having constructed a man of straw, Father Morice valiantly and triumphantly demolishes him utterly. All that I think I need say is that, in his own words, you may "characterize such tactics as you will."

R. B. DIXON

BRIEF COMMUNICATIONS

NOTES ON STATE ARCHAEOLOGICAL SURVEYS

THE STATE ARCHAEOLOGICAL SURVEY COMMITTEE of the National Research Council is still active and reports increased interest among the States of the Mississippi Valley. The reports of progress covering operations during the year 1921, filed with this Committee, were summarized in Vol. 24, No. 2, of the *American Anthropologist* and in conformity with this there are here submitted extracts from the reports for the year 1922.

Alabama. The 1922 work of the Alabama Anthropological Society included exploration work in sixteen counties in the State, in the case of five of which no work had heretofore been done. This extension work was done directly in conjunction with the Department of Archives and History, and includes largely historical investigations in connection with the aboriginal life of those particular localities.

A survey of two counties in the eastern part of the State was begun and is well under way, with the prospects of completion during the coming season.

The Society is giving during this scholastic year a course of lectures on the early history of the State down to the period of the Indian war of 1813, when the State was really opened up to white settlement. Twenty-one advanced pupils of the Woman's College of Alabama are taking this course. The undersigned is doing much of the lecture work, though other members of the Society will assist from time to time.

Exploration work at the mouth of Pintlala Creek in Lowndes County has been extensively conducted and numerous new evidences of urn burials have been noted. A report covering the details of this work up to that time was published in *Arrow Points* in April, 1922. Evidences of that fine culture noted by Moore at Moundville have been uncovered during the year on Okfuski Creek, on the eastern boundary of Montgomery County. Gorgets and other personal ornaments depicting this Moundville art had previous to this time never been noted this far east.

The designation of aboriginal points as Public Reservations and Park sites is meeting with much popular interest and encouragement and the Department of Archives and History has added a number of these sites to the list during the current year. The Anthropological Society has taken the lead without the assistance of other historical agencies in the State in bringing the attention of the public to these places.—Peter A. Brannon.

Arizona. While not at present giving attention to work within the State, the University of Arizona is coöperating with the Mexican Government in work across the border. The latter half of the year was given to excavation near Tlalpam around a truncated cone. This truncated cone is some 400 feet in diameter at the base and 75 feet high with a superstructure added later that makes its total height 100 feet. It is built of lava rock and earth and its surface walls are laid in crude cyclopean style. There are no carved decorations and no hewn stone, nor any mortar or cement of any kind in the entire structure. It had been built, partially ruined, repaired and enlarged, and used again, then shattered a second time and covered with a great amount of débris before the last lava flow occurred. This lava, known as the Pedregal, surrounded it and flowed up over its base walls, already covered with 12 to 15 feet of broken lava-rock and silt.—Byron Cummings.

California. New archaeological sites were located in the Sonoma Valley. A report on shellmound excavations near the town of Richmond, on San Francisco Bay, was prepared for publication and another covering explorations of earth mounds in the San Joaquin delta.—A. L. Kroeber.

Illinois. Mr. W. K. Moorehead continued his researches at the Cahokia group of mounds, the expedition being financed by the University of Illinois. The total number of skeletons recovered up to the present time is about 100. About 4,000 artifacts have been secured.

Indiana. In our coöperative work with the Historical Commission we have prepared maps of about half of the counties in Indiana, on which members of the county historical clubs are expected to locate archaeological deposits. One of these reports has already been received. It is a report on Jefferson County by Professor Glenn Culbertson, of Hanover College. It is a very excellent piece of work and is accompanied by a map showing the location of the

archaeological deposits. We are expecting other reports to be filed within a short time. During the course of our geological field-work we located and visited archaeological remains in Greene, Gibson, and Pike counties. We have ceased to give publicity to the location of these deposits until we can take steps to insure their being preserved. As soon as a newspaper report appears concerning the discovery of the new location the commercial relic hunter immediately proceeds to destroy the value of the deposit.—W. N. Logan.

Iowa. Archaeological survey work for 1922 began with a preparation trip to different study centers in neighboring States. This trip was carried out by the undersigned and had for its purpose the gaining of suggestions and counsel as to the methods used in making a State survey. Calls were made at Madison on Mr. Charles E. Brown, at Milwaukee on Dr. S. A. Barrett and Mr. Alanson Skinner, at Indianapolis on Dr. John M. Oliver. Conferences with the gentlemen named were most profitable and encouraging, and the suggestions received should find much application in the Iowa work. As no attempt has been made for about thirty years to collect and systematize the records of Iowa antiquities, it was deemed best to begin with the preparation of a bibliography and summary of the literature. During the past summer considerable progress was made on this work, which was carried on, for the most part, in the Library of The State Historical Society at Iowa City. A few short field trips were made during the past season, but these were rather in the nature of reconnaissances, no sub-surface work being undertaken. Various mound groups were visited, several collections were examined as to their Iowa contents, and some eight Indian rock-shelters were located on the Maquoketa and Wapsipinicon rivers. All work was done under the auspices and with the support of The State Historical Society of Iowa, Dr. Benj. F. Shambaugh, Superintendent.—Charles Reuben Keyes.

Kentucky. Archaeological investigations for the past summer and fall have been confined to the examination of a few caves on the Cumberland River, mainly one near Mill Springs in Wayne County. As a result of a preliminary examination of this cave, we found the cave or rock house, which was 145 feet deep, 60 feet wide, and 30 feet high, a rich storehouse of animal and human remains. In all we unearthed in whole or in part thirteen human skeletons, with associated implemental remains, such as stone hoes (in large numbers),

flint arrowheads, stone pestles, skinners, bone implements and ornaments, shell beads, one piece of mica, fragments of pottery, and one clay pipe. All the stone implements were made of local material. Practically all of the bone implements were made from either the cannon bones or the ulnas of the deer. The bones of the animals eaten by the occupants of this cave were found in great profusion, all of the long bones and skulls having been cracked for the edible contents. We identified from these bones the following, which are given in about the order of relative abundance: mammals—deer, bear, buffalo, elk, dog or wolf, wildcat, panther, beaver; birds—wild turkey, prairie chicken, crane. The excavations were continued to a depth of four to eight feet, nowhere reaching the original rock bottom of the cave. In one place a stalagmite having a base of eight feet and an original height of six feet was removed and digging continued to a depth of four feet below it. Bones of wild animals, all of existing species, and human implements were found all through this stalagmite and below it. As this stalagmite must have formed very slowly, as there is only a small drip when it rains to account for it, it is certain that this cave or rock house was occupied for a very long time.—Arthur M. Miller.

New England. During the past year Phillips Academy, Andover, Massachusetts, supported a survey of the lower Connecticut Valley and the Rhode Island-Connecticut coast from below Providence to the mouth of the Housatonic. At Milford, Connecticut, on the east side of the Housatonic, was found a shellheap nearly a quarter of a mile in extent. So far as is known this is the largest in New England. A large quantity of broken pottery, flint and bone implements, together with a number of burials, were found. Two skeletons were discovered lying on the shore line of the old river channel. With them were some rude stone ornaments. The survey mapped nearly one hundred sites, historic as well as prehistoric, and expects to continue work next year.—Warren K. Moorehead.

Ohio. Work for the year was taken up with a survey of the noted Hopewell Group of mounds, locating a number of new mounds not heretofore noted. Several of the new mounds were examined during the season and proved of special interest and value in the study of the mortuary customs of this culture. In the Mound City Group examined last year the custom of cremation prevailed and no skeletal remains were in evidence in any of the mounds of that

Group, but at Hopewell inhumation and cremation are in evidence in the same mounds together with the necessary equipment to carry forward the cremative ceremonies. We anticipate splendid results in our examination of this Group.—Wm. C. Mills.

Oklahoma. For several years we have been carrying on a survey, but for lack of sufficient appropriations we have never been able to go very deeply into the work. Our State is rich in archaeological remains. Thousands of mounds, some of which at least have proved to be human habitations, are found, and numerous caves and cliffs which afforded ideal places for early man occur and several of these have been examined.

A few years ago J. B. Thoburn, now in charge of the State Historical Department, Oklahoma City, spent one season in the field. The results of his work were very encouraging and a large amount of material was collected. During the past season a party of four worked in Delaware County where they secured valuable information and made some good collections. During the latter part of the season the writer made some investigations in the Sand Hills along the river in Beckham County near Sayre and found evidences of human occupation. We expect to carry on further investigations in this region. In all, to my knowledge, eleven skulls have been taken from the Sand Hills in this locality and other discoveries which have been made lend considerable interest to the site.—C. W. Shannon.

South Dakota. The work in this State is under the auspices of the State Geological and Natural History Survey; Dr. Freeman Ward, Director; William H. Over, field archaeologist. The period for research each year is usually limited to July and August. Nearly one hundred village sites, once occupied by three prehistoric tribes, have been discovered along the Missouri River. These have been precisely located and plots made of all fortified village sites. Excavations have been made in the earthlodge sites and the refuse heaps. Over two hundred skeletons have been taken from the burying grounds, which, with the material collected, has been deposited in the University Museum.

Systematic work is also being done in the mounds of the Big Sioux Valley and the Big Stone Lake region of the extreme eastern part of the State. Seven mounds were excavated during July and August of 1922 and twenty-eight skeletons and other material secured. It will be necessary to spend one more season in this mound

region and one in going over the scattering villages and camp sites before the survey is complete and ready for publication.—Wm. H. Over.

Wisconsin. In the preservation of groups of Indian earthworks and other remains there has been increased activity, the Wisconsin Archaeological Society and the Indian State Landmarks Committee closely coöperating in this work, the History and Landmarks Committee, Wisconsin Federated Women's Clubs, and the local Daughters of the American Revolution greatly assisting. At Madison four Indian mounds located in three different city parks (Hudson, Elm-side, and Burrows) will be marked with descriptive metal tablets by the local Rotary, Kiwanis, and Roxana clubs. The University of Wisconsin has placed metal tablets on the remaining earthworks of three mound groups situated on its grounds. These replace wooden markers formerly in use. The gift of a small tract of land on the north shore of Lake Mendota to the Madison Y. W. C. A. for summer camp purposes preserves a fine linear earthwork.

An especially fine group of twenty-eight effigy and round mounds on the grounds of the newly constructed State Soldiers Memorial Hospital on Farwell Point, Lake Mendota, is being carefully restored under competent direction. Some of these ancient monuments were excavated and others mutilated in obtaining soil some years ago and these holes and pits are being filled in and the mounds sown with grass seed. The group of hospital buildings has been constructed and the roads laid out with a view to permanently preserving the mounds which now add very greatly to the interest of these beautiful grounds.

On the adjoining grounds of the State Insane Hospital the curving tail of a huge panther-type mound has also been restored, it having been under cultivation for a number of years.

Madison now has preserved in public parks and other public grounds a total of about one hundred Indian mounds in eighteen different localities. Most of these are marked with metal tablets.

Near Wyocena in Columbia County is an effigy mound which its owner is presenting to the Society. Being by the side of the highway it is to be included in a small public park and conveniences for tourist picnickers provided.

Other solitary mounds and groups have been or are being permanently preserved at Lake Emily in Portage County, Fox Lake, Nekoosa, and other places.

The Winnebago County auxiliary society has been very active in erecting markers, protecting landmarks of Indian interest, conducting field meetings and researches, and in adding to the anthropological collections of the Oshkosh public museum, of which institution it has undertaken the management.

The work of mapping and investigating Indian remains has gone forward very successfully in parts of Columbia, Richland, Polk, Sauk, Dodge, Dane, and other counties. At various times during the year correspondence has been conducted and conferences held with members of State organizations which are undertaking field-work in Minnesota, Iowa, Illinois, Indiana, and Michigan.

The Society has issued three new publications, "Beaver Dam Lake," "Stoneworks in Winnebago County," and "Western Sauk County." A fourth report on "Lake Monona" is in press. Every year there is a greater call for these reports, especially from school teachers and women's clubs. Markers are being erected on some of the State highways which indicate the location of notable Indian landmarks of particular interest to the traveler. Guidebooks and leaflets referring to these remains are also appearing in different localities.—Charles E. Brown.

CLARK WISSLER

ANTHROPOLOGY AT THE CAMBRIDGE MEETING AND PROCEEDINGS OF THE AMERICAN ANTHROPOLOGICAL ASSOCIATION

The American Anthropological Association held its twenty-first annual meeting at the Massachusetts Institute of Technology and the Peabody Museum of Harvard University, Cambridge, Mass., December 27, 28 and 29, 1922, in conjunction with Section H, American Association for the Advancement of Science; The American Folk-lore Society; and the Maya Society.

One meeting of the Council was held with Vice-President MacCurdy in the Chair.

COUNCIL MEETING, DEC. 27, 9 A.M.

The following reports were read and accepted:

REPORT OF THE SECRETARY

The proceedings of the last annual meeting of the American Anthropological Association were published in the *American Anthropologist* for January-March, 1922. There has been no special meeting of the Association nor of the Council during the year.

The anthropological membership of the Division of Anthropology and Psychology in the National Research Council is now as follows:

To serve until July 1, 1923: Clark Wissler, F. W. Hodge, J. H. Breasted.

To serve until July 1, 1924: B. Laufer, J. W. Fewkes.

The association has lost by death during the year five members: Wm. H. Babcock, Rev. J. B. Nies, Dr. W. H. R. Rivers, Dr. M. H. Simons, James A. Teit.

One member has resigned, five have died, and thirty-seven new members have been added to the list, making a net gain of thirty-one. This gain, however, will be partly offset by the dropping of certain members in arrears carried temporarily on the rolls. The membership at present is as follows:

Honorary members...	5
Life members ...	12
Regular members	538
	<hr/>
	555

Respectfully submitted

ALFRED V. KIDDER,
Secretary.

REPORT OF THE TREASURER

Receipts

Balance on hand, December 21, 1921.....		\$1,943.80
American Ethnological Society.....	\$ 334.00	
Anthropological Society of Washington.....	165.00	
Annual Membership dues:		
1920.....	\$ 5.40	
1921.....	72.40	
1922.....	1,376.50	
1923.....	178.60	
Life membership.....	100.00	1,732.90
Sale of publications ..		308.09
Reimbursements.		115.50
Interest.....	27.44	\$2,682.93
		<hr/>
		\$4,626.73

Disbursements

New Era Printing Co:		
Printing, etc.....	\$1,312.60	
Boxing and drayage, back nos.....	66.98	
	<hr/>	\$1,379.58
Geo. Banta Publishing Co:		
Printing, etc.....	\$1,040.10	
Freight, drayage, storage, back nos..	434.04	
	<hr/>	\$1,474.14
Joyce Engraving Co.	\$ 124.33	
Editor and Secretary-Treasurer's expenses....	183.48	
Dues refunded.....	17.00	
Purchase back nos. <i>Anthropologist</i>	13.00	
Drawings.....	5.00	
Life membership transferred to permanent fund..	100.00	
	<hr/>	
Total disbursements.....	\$3,296.53	
Cash on hand.....	1,330.20	\$4,626.73

Resources

Cash on hand, Dec. 11, 1922..		\$1,330.20
Due from sales:		
1921.....	\$ 32.22	
1922.	44.63	
	<hr/>	\$ 76.85
Due from dues:		
1921.....	60.00	
1922..	217.00	
	<hr/>	\$ 277 00

Due from Anthropological Soc. Wash.			
Vol. 24, No. 3.....	45.00		
Due from Am. Ethnol. Soc.			
Vol. 24, No. 3 and dues.....	230.00		
Due from above societies after publi-			
cation Vol. 24, No. 4, about.....	160.00	\$ 435.00	\$ 788.85
Total resources.....			\$2,119.05

Liabilities

Membership dues from 1923 already paid.....	\$ 178.60		
Cost of <i>American Anthropologist</i> ,			
Vol. 24, Nos. 3 and 4 (est.).....	1,100.00		
Total liabilities.....	\$1,278.60		
Net excess resources over liabilities.....	840.45	\$2,119.05	

Cost of Publications

<i>American Anthropologist</i> , vol. 23-3			
Engravings.....	\$ 22.23		
Printing.....	551.16	\$ 573.39	
Reimbursements.....	20.00	\$ 553.39	
<i>American Anthropologist</i> , vol. 23-4			
Engravings.....	\$ 18.68		
Printing.....	619.78	\$ 638.46	
Reimbursements.....	15.50	\$ 622.96	
<i>American Anthropologist</i> , vol. 24-1			
Engravings.....	\$ 39.82		
Printing.....	453.69	\$ 493.51	
Reimbursements.....	35.35	\$ 458.16	
<i>American Anthropologist</i> , vol. 24-2			
Engravings.....	\$ 69.79		
Printing.....	461.60	\$ 531.39	
Reimbursements.....	44.65	\$ 486.74	
Net Cost.....		\$2,121.25	
Reprints and distribution.....		249.68	
Total Cost.....		\$2,370.93	

PERMANENT FUND

Receipts

Balance, December 21, 1921.....	\$1,330.62
Interest, April, 1922.....	\$ 6.38

Interest, Oct., 1922.....	6.37	12.75
Rec'd from two life memberships.....		200.00
		<u>\$1,543.37</u>
<i>Investments</i>		
Liberty Bonds.....	\$ 288.50	
W. S. S.	41.87	\$ 330.37
Cash awaiting investment.....		113.00
Loan to general fund.....		1,100.00
		<u>\$1,543.37</u>

The accounts of the Treasurer, A. V. Kidder, have been examined and found correct.

R. B. DIXON,
E. A. HOOTON,
Auditing Committee.

The total receipts have been about eight hundred dollars less than during 1921. This is due to the new arrangement of not sending out the bills for the ensuing year until Jan. 1, and also to the fact that certain sums due from the two local societies have not yet been called in.

The total disbursements have, on the other hand, been about twelve hundred dollars more than in 1921. This is due to the fact that four numbers of the *Anthropologist* have been paid for in 1922, as against three numbers in 1921; and that approximately five hundred dollars has had to be spent for the transfer of our large stock of back numbers from Lancaster, Pa. to Menasha, Wis. A very considerable saving in publication expense has been made by the Editor through the change in printers; and, what is of even more importance, a much greater punctuality of issue has been attained, no less than five numbers having appeared during the year.

An examination of the statement of Resources and Liabilities shows that the Association is in sound financial condition; but this has been maintained by the strictest economy on the part of the officers and particularly by the very successful efforts of Dr. Swanton in keeping down the cost of publications. I feel that the Editor should be empowered to spend, in the coming year a greater amount for the *Anthropologist*, in order that it may be enlarged both in size and in number of illustrations.

Respectfully submitted,

ALFRED V. KIDDER,
Treasurer.

REPORT OF THE EDITOR

Early in the present year it seemed to the Editor that there was no immediate prospect of any relief from the cumulative delays in the appearance of the *Anthropologist* with which we had been obliged to contend, unless a change were made in printers, and, after obtaining estimates from about a dozen publishing concerns in seven different cities, it was decided, with the approbation of the Committee on Publication, to give the contract for the ensuing year to the George Banta Publishing Co. of Menasha, Wisconsin. The last number of the journal for 1921 appeared so late that it has proved somewhat difficult to make up for the time already lost, but the first three numbers for the current year are now in the hands of our members and practically all of the copy for the fourth number has gone to press. Delays must still be expected, but, if our contributors keep us supplied with material, we hope to be up to date before the end of 1923. Until it is possible to give out dates for the appearance of articles with more assurance, I have not, however, felt inclined to solicit contributions beyond those voluntarily offered, or to initiate any new departures.

We have also been handicapped by an unexpected expense connected with the back issues of the journal. As we were totally unaware of the amount of this material which had accumulated since the foundation of the *Anthropologist* in 1898, in spite of one or two obscure hints from our former printers, we were entirely unprepared for transportation charges of five hundred dollars for transferring these back numbers from Lancaster, Pa., to Menasha, Wis. Moreover, our new printers were unable to furnish storage facilities for the greater part of this material, the best they could do being to obtain storage outside at a monthly outlay of ten dollars. Thus we were not only subjected to an immediate cut in our resources but compelled to face a constant expenditure which threatens to convert what was once a considerable asset into a liability. Had the Editor been aware of the amount of material held in storage at Lancaster, he would have provided for its disposal somewhere in the East.

In consequence of this unexpected financial burden the Editor has made extra efforts to hold expenses down, and the Treasurer has coöperated with him in every way. The assumption of the duties of Treasurer by the Secretary has been an immense relief, particularly in view of the hearty manner in which Dr. Kidder has taken hold of his new duties.

The review section of the *Anthropologist* has continued under the efficient management of Dr. Lowie, who has also contributed materially to the shorter articles and the notes. Material has also been furnished by the second Associate Editor, Dr. Speck, and the advisory sub-committee on publication has responded promptly to every request for assistance.

As soon as the condition of our finances seems to warrant it I would recommend two things: (1) that the Association resume paying for illustrations, and (2) that it attempt to provide for at least one small *Memoir* annually.

With reference to the first of these points it should be remembered that illustrated articles are in a peculiar way an asset to the journal which calls for encouragement. If it is found impracticable to furnish both illustrations and reprints free, it is worth considering whether it might not be wiser to charge for the latter instead of the former, or perhaps, as is the custom with some publications, give contributors a few extra copies of the journal instead of separates. Under the present system the relatively poor contributor, who finds it necessary to use illustrations, may have to forego publication entirely, whereas under the other plan it would be possible for him to have his communications given wide publicity among anthropologists even though he felt unable to purchase additional reprints. In the former case he is forced to be out of pocket; in the latter case it is merely optional with him. Therefore I should like to present the following possible solution of the matter for your consideration. I suggest: (1) that the Association pay for illustrations; (2) that contributors pay for all of their own reprints; but (3) that each contributor be given the privilege of sending in, say, ten addresses to which as many copies of the journal containing his paper will be sent free of charge, or that the same number of copies of the journal be sent to him, as he may elect. I may state parenthetically that reprints now cost the Association almost a hundred dollars per issue. It is to be understood that the above plan is put forth only in case the Association feels unable to furnish both illustrations and separates.

On the second point mentioned I merely wish to say that some of our members were attracted to become such largely by the *Memoirs*, and I feel in some way a moral obligation to resume the publication of them as soon as possible.

In my last report I alluded to the possible introduction of certain changes in the form and time of appearance of the *Anthropologist*.

Such innovations should be made cautiously, but I would be very glad if, between now and the next annual meeting, you would consider the advisability of converting the journal into a bi-monthly—six issues per year instead of the present four. This would not involve great additional expense if the total number of pages remained approximately the same as now, and it would therefore not preclude the publication of a *Memoir* in addition.

The editor had hoped it would be possible considerably to expand the department devoted to anthropological news, but in view of our limited space and infrequent publication, it has seemed for the present wiser to confine ourselves principally to original material.

Respectfully submitted,

JOHN R. SWANTON,
Editor.

The Treasurer recommended the following budget for 1923, which was adopted:

Publications	\$3,200
Expenses of officers	100
Storage and back numbers	120
	<hr/>
	\$3,420

It was moved and passed that:

The Editor be authorized to pay for the illustration of articles at his discretion.

That the Editor be empowered to renew if desirable the publication of *Memoirs*.

That the Editor be directed to supply fifty reprints without covers to authors of articles appearing in the *Anthropologist* or in the *Memoirs*.

That the Treasurer be empowered to fix prices for incomplete sets of back numbers of the publications of the Association.

Dr. P. E. Goddard, chairman of the committee to consider methods of voting by mail on questions of particular moment which may be submitted to the Council, reported by letter that the opinion of the committee was unfavorable to taking action on the matter at the present time.

The following committees were appointed:

On nominations: R. B. Dixon, E. Sapir, M. H. Saville, N. C. Nelson, A. V. Kidder.

On resolutions: F. Boas, C. C. Willoughby, H. J. Spinden.

On Spencer Fullerton Baird Memorial: C. Wissler, E. A. Hooton, A. M. Tozzer.

On Indian policy: W. K. Moorehead, H. J. Spinden, Alice White, Wm. Gates, Elsie Clews Parsons, F. G. Speck.

The following new members were elected: E. Arnett, J. F. Brady, Brown School of Sociology, Wm. L. Bryant, N. L. Bull, B. T. Butler, L. Child, E. Clark, J. A. Cosculluela, Mrs. Estabrook, V. J. Evans, W. N. Ferris, D. Forsyth, T. R. Garth, A. A. Giesecke, A. A. Goldenweiser, D. E. Harrower, K. W. Hiersemann, E. R. F. Johnson, W. T. Johnson, M. V. Jones, R. J. Kellogg, J. A. Kilbourn, G. C. Kreidel, E. Loosjes, L. L. Loud, W. C. MacLeod, E. L. Matlock, W. P. Morgan, Y. S. Nathanson, W. B. Nickerson, H. F. Osborn, Princeton University Library, San Diego Museum, Sante Naccarati, J. K. Shyrock, F. Somer, H. H. Stark, F. A. Stengel, J. Stockley, S. Umehara, G. C. Vaillant, L. E. Valcarcel, C. Wilde, W. Wildshut, C. L. Wilhelm, W. C. Wyman, F. R. Wulfsin.

ANNUAL MEETING, DEC. 29, 9 A.M.

The following list of officers was presented by the Nominating Committee:

President: Walter Hough.

Vice-President (1926): F. C. Cole.

Secretary-Treasurer: A. V. Kidder.

Editor: J. R. Swanton.

Executive Committee: G. B. Gordon, F. W. Hodge, A. Hrdlička.

Council (1926): Alice C. Fletcher, Rachael Lothrop, Elsie Clews Parsons, S. Culin, R. H. Lowie, C. H. Hawes, E. Sapir, N. C. Nelson, J. A. Mason, H. Bingham, E. W. Gifford, H. Webster, H. E. Smith, G. B. Gordon, D. Jenness, F. H. Saville.

Representatives of the Association on the National Research Council to serve for three years from July 1, 1923: J. R. Swanton, F. G. Speck.

Delegates of the Association to Section H of the A. A. A. S.: A. Hrdlička, F. W. Hodge, E. A. Hooton.

The above officers and members of the Council were declared elected by a vote ordered cast by the Secretary.

The Vice-President and Chairman, Dr. G. G. MacCurdy, appointed the following committees with power to act:

To investigate the status of Anthropology in United States Government institutions: R. B. Dixon, C. Wissler, F. W. Hodge, B. Laufer, A. E. Jenks, A. L. Kroeber, W. C. Farabee, G. G. MacCurdy, A. V. Kidder.

To determine the place of the next annual meeting of the Association: A. Hrdlička, F. W. Hodge, E. A. Hooton.

The following Committees were appointed subject to the confirmation of the incoming President:

Joint Committee on Relations with Central States Section: C. Wissler, G. G. MacCurdy, B. Laufer, S. A. Barrett.

Committee on Program: F. G. Speck (Chairman), A. V. Kidder (Sec'y *ex-officio*), P. E. Goddard, H. U. Hall, M. H. Saville, C. M. Barbeau, S. J. Guernsey, N. M. Judd, S. K. Lothrop.

Committee on Finance: R. B. Dixon (Chairman), Wm. Gates, G. G. Heye, C. B. Moore, E. E. Ayer, W. H. Furness, C. L. Hay, A. M. Huntington, J. B. Stetson, Jr.

Committee on Policy: Clark Wissler (Chairman), W. H. Holmes, S. Culin, G. B. Gordon, W. C. Mills, C. Peabody, F. Boas, J. W. Fewkes, A. E. Jenks, E. C. Parsons, A. M. Tozzer.

Committee on Publication: Walter Hough (Chairman *ex-officio*), J. R. Swanton, (Sec'y *ex-officio*), S. A. Barrett, S. Culin, J. W. Fewkes, A. A. Goldenweiser, F. W. Hodge, E. A. Hooton, A. Hrdlička, A. E. Jenks, A. L. Kroeber, B. Laufer, G. G. MacCurdy, W. K. Moorehead, S. G. Morley, E. Sapir, H. J. Spinden, H. N. Wardle, C. Wissler. *Advisory Subcommittee:* F. W. Hodge (Chairman), J. W. Fewkes, B. Laufer.

The following papers were presented:

The Racial Factor in the Incidence of the Supracondyloid Process. R. J. TERRY, Washington University.

Fetal Growth in Man. ADOLPH SCHULZ, Johns Hopkins Medical School.

The Anthropological Significance of Suture Closure. T. WINGATE TODD, Western Reserve University Medical School.

The Age Order of Epiphyseal Union. PAUL H. STEVENSON, Pekin Union Medical College.

Individual and Group Variation as Shown by the Sargent Test of Physical Efficiency. LEDYARD SARGENT, Sargent School of Physical Education.

New Observations on Early Man in the Old World. ALEŠ HRDLÍČKA, U. S. National Museum.

The Incidence and Heredity of Facial Hypertrichoses and The Resistance of Hair to Certain Supposed Growth Stimulants. SPENCER TROTTER.

Physical Aspects of the Caste System in India. B. S. GUHA, Harvard University.

Problems in the Origin and Distribution of Parasitic Diseases. HERBERT J. SPINDEN, Peabody Museum, Harvard University.

Mental Fatigue of Mixed and Full-Blood Indians. T. R. GARTH, University of Denver.

Heredity of Build. CHARLES B. DAVENPORT, Station for Experimental Evolution, Cold Spring Harbor, N. Y.

The Application of Anthropology to Clinical Medicine. A. The Problem from the Standpoint of the Clinician. GEORGE DRAPER, Presbyterian Hospital, New York. B. Adapting Anthropometric Methods to the Patient. DAVID SEEGAL, Presbyterian Hospital, New York.

Coöperative Research in Anthropometry. CLARK WISSLER, American Museum of Natural History, New York.

Physical Anthropology in America: What It Has Already Accomplished and What Remains for It to Do. ALEŠ HRDLÍČKA, U. S. National Museum, Washington, D. C.

- The Distribution of Human Types.* R. BENNETT BEAN, University of Virginia, Charlottesville, Va.
- Anthropometrical Studies Applied to the Hygiene of School Children.* JOHN C. GERHART.
- The Basis of Social Organization.* A. A. GOLDENWEISER, New School for Social Research, New York.
- The "Harvard African Studies."* RUTH O. SAWTELL, Phillips Academy, Andover, and the Peabody Museum, Harvard University.
- Some Anthropological Problems of China.* CHI LI, Harvard University.
- Field Work in Hawaii.* K. P. EMORY, Bishop Museum of Honolulu, and Harvard University.
- Problems in Athabascan Morphology.* EDWARD A. SAPIR, Victoria Memorial Museum, Ottawa.
- The Development of the Speech Function among the Indo-Germanic Races.* MARK H. LIDDELL, Purdue University.
- Notes on the Progress of Archaeology in Europe.* N. C. NELSON, American Museum of Natural History.
- The Copper Eskimos and Their Early Home.* D. JENNESS, Victoria Memorial Museum, Ottawa, Canada.
- The Geographical Distribution of Potsherds in the San Francisco Mountains of Arizona.* HAROLD S. COLTON, University of Pennsylvania.
- (a) *Recent Palaeolithic Discoveries in Siberia.* (b) *Certain Specimens from the Rivière Collection now in the Peabody Museum of Yale University.* GEORGE GRANT MACCURDY, Yale University.
- Pictograph Slabs in the Southern United States.* W. E. MYER, Bureau of American Ethnology.
- Studies at the Cahokia Mounds.* WARREN K. MOOREHEAD, Phillips Academy, Andover, Mass.
- Pottery Distribution of the Northeastern United States.* GEORGE VAILLANT, Harvard University.
- The Racial History of the American Indian.* ROLAND B. DIXON, Peabody Museum, Harvard University.
- Tree-ring Studies in the Relative Chronology of Archaeological Remains.* A. E. DOUGLASS, University of Arizona.
- The Friendly Lion.* PHILLIPS BARRY.
- The Primitive Mind.* A. A. GOLDENWEISER, New School for Social Research.
- Folk Songs of French Canada.* C. M. BARBEAU, Victoria Memorial Museum, Ottawa.
- Divination among the Bassa Clans of Southern Cameroun.* GEORGE SCHWAB, Peabody Museum, Harvard University.
- Weather Lore of the Texas-Mexican Border.* J. FRANK DOBIE, University of Texas.
- Variations at Taos from Pueblo Indian Culture.* ELSIE CLEWS PARSONS.
- Sociological Effects of Ignorance in Regard to the Nature of Procreation.* GEORGE WILLIS COOKE, Francetown, N. H.
- The "Chac Mool" Figures.* STANSBURY HAGAR, New York City.
- The Culture Significance of Language Groupings in Middle America.* HERBERT J. SPINDEN, Peabody Museum, Harvard University.

- The Ruins of Tulum.* SYLVANUS G. MORLEY, Carnegie Institution.
The Cenote Report. ALFRED M. TOZZER, Peabody Museum, Harvard University.
The History of the Maya and Aztec Numerations. LEO WIENER, Harvard University.
Three Maya Glyphs. WILLIAM GATES.
Catherwood's Drawings in the Field of Mayan Antiquities. MARSHALL H. SAVILLE, Museum of the American Indian, Heye Foundation, New York, N. Y.

The following papers were read by title:

- Occipito-vertebral Variations.* BRUNO OETTEKING, Museum of the American Indian
Preliminary Observations on the Relation between Head-form and Certain Types of Visual Defects. H. L. SHAPIRO, Harvard University.
Observations on the Eruption of Teeth in Relation to Growth and Development. MILO HILLMAN.
Survey of Anthropometrical Data Collected in American Colleges. FLORENCE A. MEYER.
The Hereditary Family Hunting Territory as the Basis of Lenápe Social Organization. WILLIAM CHRISTIE MACLEOD, University of Pennsylvania.
Comments upon the Manuscript of Felipe Guaman Poma de Ayala. PHILIP A. MEANS, Peabody Museum, Harvard University.
Feather Mantles of California. C. C. WILLOUGHBY, Peabody Museum, Harvard University.
Progress of the National Geographic Society's Pueblo Bonito Expedition. NEIL M. JUDD, U. S. National Museum.
On the Origin of Ornament—a Psycho-physiological View. ADOLFO DE HOSTOS, Porto Rico.
Food Plants of the Indians of Guatemala. WILSON POPENOE, U. S. Bureau of Agriculture, Washington, D. C.

ALFRED V. KIDDER,
 Secretary.

ANTHROPOLOGICAL NOTES

A NEW YORK LAW AGAINST THE FORGERY OF ARCHAEOLOGICAL OBJECTS

The following bill, drafted by Mr. Arthur C. Parker, Archeologist of the New York State Museum, has passed both branches of the New York Legislature:

AN ACT

To amend the penal law, in relation to the reproduction or forgery of archeological objects.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. The penal law is hereby amended by adding at the end of article eighty-six a new section, to be section nine hundred and fifty-nine, to read as follows:

§959. Reproduction or forgery of archeological objects. The reproduction or forgery of any archeological object which derives its value from its antiquity, or the making of any object, whether copied or not, with intent to represent the same to be an original and genuine archeological specimen, with intent to deceive or offer such object for sale or exchange, representing the same to be the original and genuine; or knowingly to have possession of any such reproduced or forged archeological objects, with intent to offer the same as original and genuine, is a misdemeanor punishable by a fine of not less than twenty-five nor more than two hundred dollars or by imprisonment in the county jail for not more than ninety days, or by both such fine and imprisonment.

§2. This act shall take effect September first, nineteen hundred and twenty-three.

MISS ALICE C. FLETCHER, Assistant Ethnologist of the Peabody Museum, Harvard University, since 1882, and holder of the Thaw Fellowship in American Archaeology and Ethnology since 1891, died at her home in Washington, D. C., April 6, 1923. An extended account of her life and work will appear in a later issue of the *Anthropologist*.

PROF. FRANZ BOAS was invited by the president of Bryn Mawr College to give a series of three lectures to students in April. His titles were "The Aims and Methods of Anthropology," "The Races and Languages of Man," and "The Diffusion of Cultural Traits and the Continuity of Cultural Development."

DR. WALDEMAR JOCHELSON, who is now at the American Museum of Natural History preparing the results of his Aleut Expedition, delivered an address on the Aleuts before the Anthropological Society of Philadelphia in April.

DR. SPENCER TROTTER, who is conducting courses in Anthropology at Swarthmore College, has left part of his work in charge of Dr. Frank G. Speck of the University of Pennsylvania and is leaving for a trip of reconnaissance in the South Pacific.

DR. W. C. FARABEE has returned to Philadelphia from Peru and Chile.

It may be surprising to learn that the northeastern Australian aborigines (Dieri, Ngameni, Nauroworka) numbering 12,000 some fifty years ago are now reduced through tuberculosis and syphilis and the ills attending the settling of their habitat by Europeans to 120 souls.

DR. A. A. GOLDENWEISER, in April, gave a series of six lectures on "The New Psychology and Early Civilization" in Philadelphia under the auspices of the Pennsylvania School of Social and Health Work. He presented the following titles: "Psychology and Social Science," "J. G. Frazer and the Psychoanalysts," "Freud's Interpretation of Primitive Society," "Jung and Racial Theory," "Dreams and Myths," and "The Social Uses of Psychology."

MR. NEIL M. JUDD, Curator of American Archaeology in the U. S. National Museum, left Washington May 4 to resume direction of the National Geographic Society's expedition for the exploration of Pueblo Bonito, New Mexico. His staff this year includes nine especially qualified assistants. At the close of the season, several well-known experts in other branches of the human sciences will participate in the annual conference on problems relating to the ruin.

DR. GEORGE GRANT MACCURDY, Curator of Anthropology in Yale University, has been appointed Research Associate in Prehistoric Archaeology with professorial title.

In April a monument was erected by the Museum of the Universidad Nacional de La Plata to the memory of its founder, Dr. Francisco P. Moreno. The American Anthropological Association was invited

to participate through a representative in the accompanying ceremonies, but found it impractical to do so.

DR. RUDOLPH SCHULLER has been recently engaged in studying the Maya dialects of the southern part of Campeche, with the particular object of investigating the differences in pronunciation which exist between the Maya proper of Yucatan, the Huasteca-Tének of San Luis Potosí, and the Maya dialects as spoken today in Campeche and Quintana Roo. He expected to spend all of the month of April at least at a small Indian place called Ikáitsé, on the border of Guatemala, and cross over to Chiapas in May to visit Tsental speaking Indians, and Tsamulos.

CHUKCHI and Eskimo grave material from Puotin Bay, south of East Cape, Siberia, has been acquired by the State Museum at the University of Washington. The collection, made by Capt. Joe Bernard early in 1922, includes several skulls from the graves and some Chukchi ethnological specimens.

DR. ALEXANDER A. GOLDENWEISER of the New School for Social Research will lecture at the University of Washington during the Summer Quarter, 1923. He will offer two courses, "Primitive Social Life," and "Theories of Evolution and Progress."

COLUMBIA UNIVERSITY offers two introductory graduate courses in the Summer Session of 1923, "Introduction to Anthropology," and "Social Organization," to be given by Dr. Leslie Spier of the University of Washington.

HENRY VIGNAUD, President of the Société des Américanistes de Paris, died on Sept. 16, 1922.

DR. R. H. CODRINGTON, the "apostle of Melanesia," whose works on *The Melanesian Languages* and *The Melanesians, their Anthropology and Folk-lore* are now classics, and who first made known to ethnologists the principle of "Mana," died in 1922 at the age of ninety-two years.

THE NATIONAL RESEARCH COUNCIL has been entrusted by the Rockefeller Foundation with the expenditure of a sum of \$325,000, available between July 1, 1923, and June 30, 1928, to promote research in the biological sciences, including Zoölogy, Botany, Anthropology, and Psychology, by post-doctorate research fellowships.

Further information may be obtained by addressing the "Secretary, Board of Fellowships in the Biological Sciences, National Research Council, Washington, D. C."

At the second assembly of the League of Nations it was decided that coöperation among intellectuals in different countries of the world was a necessary step towards universal peace, and a Commission on Intellectual Coöperation was formed. One of the sub-committees of this Commission deals with bibliography and aims to institute an international bibliographical bulletin and scientific review. It will also discuss the possibility of forming one or several large international libraries at which all books published in all countries will be deposited.

THE next Pan-Pacific Science Congress is to open at Melbourne, Australia, Aug. 13, 1923, and close at Sydney, Sept. 3. The tentative list of subjects for papers and discussion in Anthropology and Ethnology includes: Polynesian and Melanesian races, Australian aborigines, totems, languages, folk-lore, anatomy.

REPORTS from Commander J. C. Thompson and Hans G. Hornbostel, representing the Bishop Museum, indicate successful outcome of the explorations in Guam and in the southern Marianne Islands. Much information has been obtained regarding the culture of vanished Chamorros, a flourishing race, at the time of Magellan's visit in 1521. Under the direction of M. F. Malcolm, assisted by the governor of Saipan, the remarkable ruins on the Japanese island of Tinian, visited by Anson (1749), Mortimer (1791) and Freycinel (1817), are being studied with a view to enlarging the knowledge of migration routes and inter-relations of Pacific peoples.—*Science*.

At the tenth session of the International Geographical Congress, held at Rome, in April, 1922, the Executive Commission of that Congress voted that the eleventh session be held in Cairo, Egypt, in 1925 under the designation "The International Geographical and Ethnological Congress." The first circular of the Organizing Committee of that session has been received, containing a list of the membership of the Committee and inviting contributions. It is stated that the probable date of the Congress will be about March 10, 1925.

To aid the Association for the Preservation of the Archaeological Monuments of Yucatan, the organization of which was announced in

an earlier number of the *Anthropologist*, an American Committee has been formed. Among the anthropologists on this committee are: M. H. Saville, Clarence L. Hay, S. G. Morley, and A. M. Tozzer.

MR. P. E. NEWBERRY has been appointed President of Section H (Anthropology) for the next meeting of the British Association for the Advancement of Science, which is to be held in Liverpool in September, and Mr. E. N. Fallaize, Vinchelez, Chase Court Gardens, Enfield, Middlesex, has been appointed Recorder.

DR. ANDERS SVEN HEDIN, of Stockholm, who spent thirteen years exploring Thibet and Eastern Turkestan, arrived in New York on February 13 on the Hamburg-American liner *Hansa*. He will lecture and will also visit American Indian ruins.—*Science*.

DR. JOHN C. MERRIAM, President of the Carnegie Institution; Dr. Marshall H. Saville, of the Heye Museum, Dr. Sylvanus G. Morley of the Carnegie Institution, Mr. Herbert J. Spinden, of the Peabody Museum, and Mr. William Barclay Parsons, chairman of the Archaeological Institute of Yucatan, visited Yucatan this spring with a view to instituting investigations on the Maya civilization.

"SCIENCE" reports that Dr. Forest B. H. Brown, Botanist of the Bishop Museum at Honolulu, and Dr. Elizabeth Brown, Research Associate in Botany, have returned from two years spent in the Marquesas Islands as members of the Bayard Dominick Expedition, bringing with them much new information bearing on the migrations of the Marquesans and other branches of the Polynesian races derived from a study of their food, ceremonial, and medicinal plants.

A communication from the Permanent Secretary of the A. A. A. S. states that

The summer meeting of the American Association for the Advancement of Science for 1923 is to be held in Los Angeles, Calif., September 17 to 19 inclusive, being a joint meeting of the Pacific Division and the Southwestern Division along with the Association as a whole. Details of arrangements are in the hands of Mr. W. W. Sargent, Golden Gate Park, San Francisco, Secretary of the Pacific Division, and Doctor D. T. MacDougal, General Secretary, A. A. A. S. (Desert Laboratory, Tucson, Ariz.) is acting as representative of the Association as a whole for this occasion. The meeting will be very unusual and probably epoch making in that it will almost immediately follow the solar eclipse of September 10 and there will be included many first reports on that happening.

DR. J. W. FEWKES, Chief of the Bureau of American Ethnology, has been elected a Corresponding Member of the Anthropologische Gesellschaft of Vienna.

THE INTERNATIONAL COMMISSION OF EUGENICS met at Brussels, Saturday, Oct. 7, and Monday, Oct. 9, 1922.

MR. W. J. PERRY has been appointed to a university readership in cultural anthropology and Dr. Bronislaw Malinowski to a readership in social anthropology in University College, London.—*Science*.

DR. EDWARD SELER, Professor of the Friedrich Wilhelms Universität at Berlin and Director of the Museum für Völkerkunde, well known for his Mayan and Mexian researches, died Nov. 23, 1922.

PROF. ERASMUS MAJEWSKI, the Polish anthropologist, died at Warsaw, November 15, 1922.

"A group of archaeologists of different nationalities, American, Belgian, British, Dutch, French, German, and Italian, recently met at the British School of Archaeology in Rome to discuss the feasibility of an international institute of archaeology, which should collect and publish current archaeological news, and which might undertake the publication of large works requiring the coöperation of archaeologists of different nations.—*The Antiquaries' Journal* (II, 1922), *quoted in American Journal of Archaeology*, XXVII, no. 1.

SHORTLY before his departure for Florida, the President signed a proclamation making a National Monument of three groups of towers in southwestern Colorado and southeastern Utah. It is to be called the Hovenweep National Monument, from a Ute word meaning "the deserted valley," applied to a neighboring canyon many years ago. This reservation was originally suggested by Dr. J. Walter Fewkes, Chief of the Bureau of American Ethnology, and the preliminary work has been done by the Bureau of Ethnology in coöperation with the National Park Service of the Department of the Interior.

THE SECOND ANNUAL MEETING of the American Anthropological Association, Central Section, was held in the Trustees' Room of the Milwaukee Public Museum, Milwaukee, Wis., March 2d and 3d, 1923. A full account of the proceedings will appear in the next number of the *Anthropologist*.

AMERICAN ANTHROPOLOGICAL ASSOCIATION OFFICERS AND MEMBERS 1923

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PRESIDENT: WALTER HOUGH, U.S. National Museum.
VICE-PRESIDENT, 1923: JOHN R. SWANTON, Bureau of American Ethnology.
VICE-PRESIDENT, 1924: G. G. MACCURDY, Yale University.
VICE-PRESIDENT, 1925: STEWART CULIN, Brooklyn Institute Museum.
VICE-PRESIDENT, 1926: F. C. COLE, Field Museum of Natural History.
SECRETARY-TREASURER: A. V. KIDDER, Phillips Academy.
EDITOR: JOHN R. SWANTON, Bureau of American Ethnology.
ASSOCIATE EDITORS: ROBERT H. LOWIE, FRANK G. SPECK.
EXECUTIVE COMMITTEE: The President, Secretary-Treasurer, Editor (*ex officio*), and
G. B. GORDON, F. W. HODGE, A. HRDLÍČKA.

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MOORE, MR. CLARENCE B.,^{*}
1321 Locust str., Philadelphia, Pa.

^{*} Deceased Apr. 6, 1923.

^{*} Those whose names are marked with an asterisk, ^{*}, are Founders of the Association.

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Station A, Lincoln, Nebr.

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THE HOVENWEEP NATIONAL MONUMENT

By J. WALTER FEWKES

SHORTLY before his departure for Florida the President issued a proclamation creating a new monument in southwestern Colorado and southeastern Utah. An event of this kind would seem to call for an account of its attractions or the salient features of the monument. Like several others, this reserve was created for the preservation of its antiquities which, although having the same general character as those of the adjacent Mesa Verde National Park, are somewhat different. The special kind of ruins characteristic of the Hovenweep monument are well preserved towers, similar to those which are found in the Mesa Verde National Park, and are most abundant and varied in the country west of that plateau far into Utah. Archaeologically speaking this monument supplements the Mesa Verde National Park and the structure of its towers and other buildings explains some of the enigmas of ruins in the park. As this new reservation was created to preserve its numerous towers a brief notice of a few buildings of the same type would be a fitting introduction to those of the new national monument. Fortunately the author's field work the past summer (1922) renders it possible to interpret some of the architectural features of the new monument.

There are several towers on the Mesa Verde that are like those of the new monument—a resemblance which shows that the prehistoric people of the Hovenweep resembled those of the Mesa Verde.

Three types of prehistoric towers are found in our Southwest: (1) square, circular, or semicircular towers without surrounding rooms; (2) towers accompanied with basal subterranean ceremo-

nial rooms or kivas; (3) towers rising from pueblos or cliff dwellings. The first type of tower is generally mounted on top of a pinnacle of rock or on the rim of a canyon. The second type is situated on level ground or earth that allows excavation of basal kivas, and the third rises from a pueblo or cliff house in which there are both kivas and living rooms. The relatively greater abundance of the second type, or a tower with a basal ceremonial room and no dwellings, would seem to indicate that the tower was connected with ceremonies, and if this be true it also seems likely that when associated with a number of rooms, as in a large ruin like Cliff Palace, it preserved the same character.

As is well known several theories have been suggested to explain the function of southwestern towers. They have been regarded as observatories, forts, bins for the storage of grain, especially corn, and as enclosures for the performance of religious rites. There are indications that they were built by an agricultural people, one of the primal necessities of whom is to determine the time for planting. This can be obtained by observations of the sun's rising and setting, and a tower affords the elevation necessary for that purpose; hence the theory that southwestern towers were in part used for sun houses or observatories. A building from which the aboriginal priests determined calendric events by solar observations very naturally became a room for sun worship or for the worship of the power of the sky.

The presence of circular subterranean rooms, which almost always occur with towers, also indicates religious rites. As the tower may have been devoted to the worship of father sun or the sky god, in the underground kiva may have been celebrated the rites of mother earth. The rooms at the base of the tower in which kivas are embedded, in towers of the third type, indicate habitations and necessary granaries, as well as rooms for ceremonials. In support of the interpretation that some of these rooms are granaries, we find rows of vases in which corn is stored still standing in them.

Pipe Shrine House, on Mesa Verde, excavated by the author last summer, presents a good example of the third type for in it we have the tower, the sunken kiva, and the rectangular basal

rooms. The ceremonial character of this building is shown not only by the tower and kiva but also by many shrines in which formerly stood stone idols of the serpent, the mountain lion, the mountain sheep, or other objects of worship. On the northeast corner of the ruin near an enclosure there was found a stone slab on which the sun was depicted, indicating that this building may have been used for sun worship rites, and a coiled pictograph of a large serpent carved on the south wall likewise points to this worship. The evidence indicates that this building was constructed for rites and ceremonies of the sun and earth deities, and the tower and its accompanying subterranean room in cliff houses indicate that the ancient priests of Mesa Verde worshipped the two great nature principles, father sky and mother earth, which dominate the ritual of every agricultural people.

The new reservation called the Hovenweep¹ National Monument (Fig. 35), contains several towers in a much better state of preservation than any in the Mesa Verde, a condition which indicates that they were constructed later.

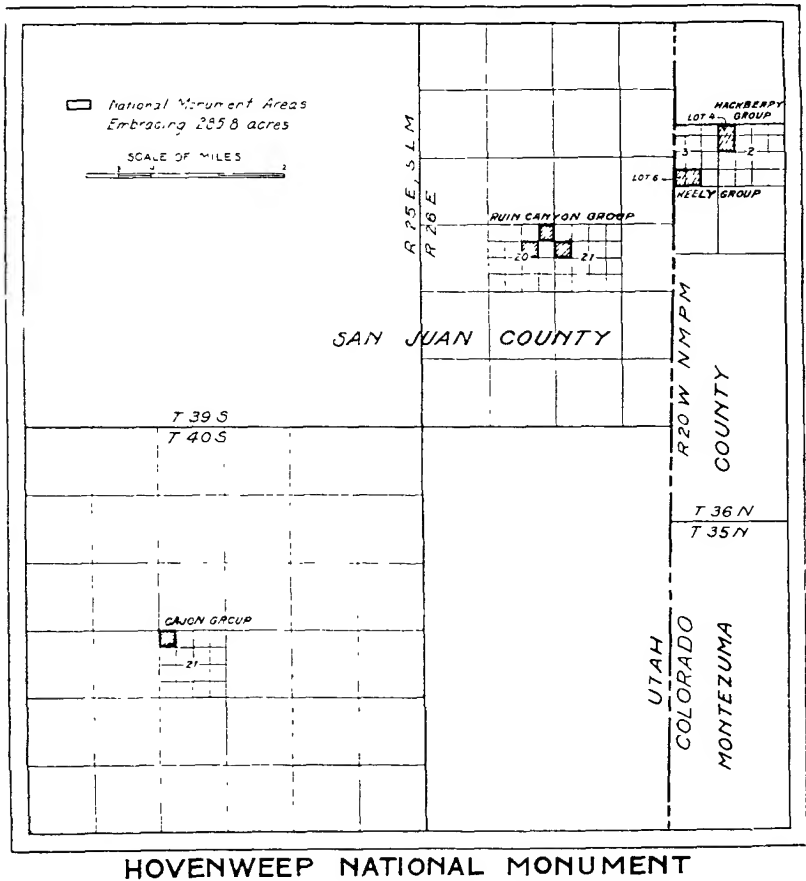
The ruined castles and towers of this monument are among the best preserved aboriginal buildings in the Southwest. The reservation (Fig. 36), includes three groups of ruins now called Square Tower, Hackberry, and Cool Spring House, on the Cajon Mesa, Utah.

One road to Hovenweep Monument passes through the McElmo Canyon which lies west of Cortez and Mancos, Colorado. There is also a good automobile road to this monument from Dolores. If the visitor uses the latter he avoids the Yellow Jacket, the bed of which is sometimes very sandy and often so swollen with water as to be impassable. If one uses the McElmo, having successfully crossed this stream, he follows the road which winds through Wickyup Canyon past two small towers situated on elevated buttes.

There are thirteen ruins in the Ruin Canyon group, over half of which are towers of the second type, which have kivas

¹ The name Hovenweep which has been given to this monument is taken from the Ute language and has been translated "Deserted Valley." It is now applied to a tributary of the Yellow Jacket, but was originally the name of the main canyon.

at their bases. One of the largest ruins is in Square Tower Canyon and stands at the head of the canyon, rising from the very rim. Although sections of the walls of this building have fallen, the remains of a large semicircular house are conspicuous

FIG. 35²

for some distance. This ruin also has buried kivas surrounded by square or rectangular rooms. In the midst of walls there formerly rose a conspicuous multi-chambered tower, whose foundation is D-shaped, its straight wall measuring 23 and the

² Reproduced by courtesy of the National Park Service, Stephen T. Mather, Director

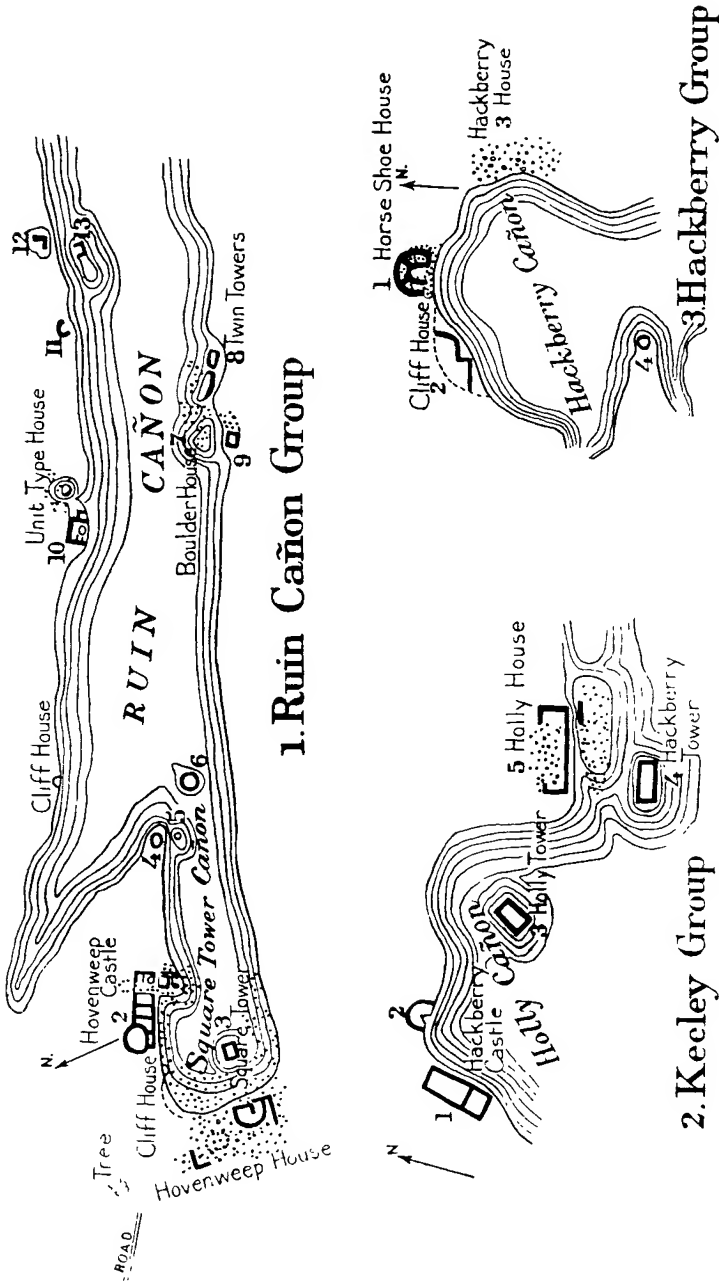


FIG. 36 Ruins in Hovenweep National Monument, Colorado and Utah

curved 56 feet. The northeast corner rises 15 feet high, and the walls of the northwest angle of the ruin are still higher. This ruin, called Hovenweep House, resembled somewhat Far View House on the Mesa Verde National Park.

The best preserved building (Fig. 37), in the Hovenweep National Monument, called Hovenweep Castle, is divided into two sections, western and southern, imparting to the ground plan

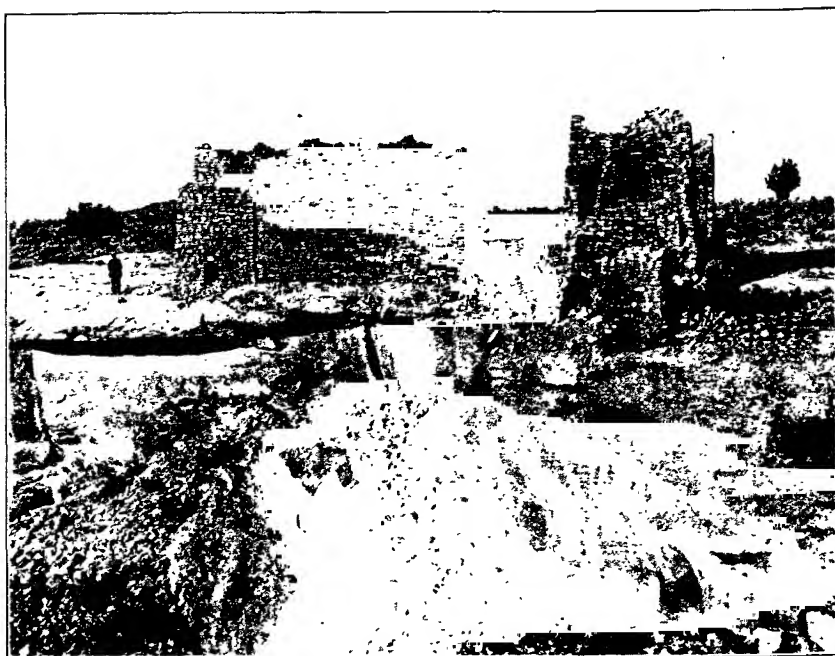


FIG. 37—Hovenweep Castle, Ruin Canyon group, Hovenweep National Monument.

of the ruin the shape of the letter L. It has towers and kivas arranged about rectangular rooms; and the western end is composed of a massive-walled semicircular tower and well preserved rooms with high walls.

The eastern section, like the western, has a tower and circular depressions or kivas. On the north and south ends the eastern section rises into high walls enclosing rectangular rooms, those at the north end being better constructed, and standing as high

as the walls of the western tower. The corners of these buildings, as is generally the case, are not well preserved, due to lack of properly tying or binding the courses of masonry. Much débris has accumulated in and around the kivas, filling their cavities; it is evident that these ceremonial rooms were formerly one-storied, and practically are subterranean on account of the height of surrounding rooms. Fragments of standing walls project out of the accumulated débris indicating rooms at the junction of the eastern and western sections of the ruin, but the form and arrangement of walls at that junction are not evident. The walls of one of the kivas show evidences of mural pilasters and banquettes like those of cliff dwellings.

The building that has given a name to the south fork of Ruin Canyon is the square tower that stands on a large angular rock below Hovenweep Castle. This remarkable example of prehistoric masonry is so situated that the outlook from the top is limited by cliffs on three sides.

There are numerous other ruins in this group, one of which is a small tower situated at the point of the mesa where the canyon bifurcates into the North and South Forks. A section of its wall still standing indicates a circular form, the north side of which has fallen; the part still intact, or that on the south side, exhibits good masonry about eight feet above the foundation. The walls of the north segment of a much dilapidated tower stand on a large angular block of stone in the bed of the canyon.

Eroded Boulder House is remarkable both from its site and its structure. Its front walls, occupying a cave worn in a boulder, have partly fallen halfway down the talus of the cliff, but the rear walls, built in the depth of the cave, still remain intact. On the top of the boulder are remains of fallen walls, suggesting the existence of a former tower. Where the walls are sheltered the clay mortar shows impressions of human hands or indentations made by a corncob used by the plasterers to press the mortar between the courses of stone. The eroded boulder formerly sheltered at least two rooms.

The so-called Twin Towers, seen together from certain points appearing as one ruin, rank among the most impressive buildings

in Square Tower Canyon. They stand on the canyon rim on the south side on a rock foundation isolated by a cleft from the adjoining cliff. The larger has an oval ground plan with evidences of a doorway in the southwest corner; the smaller has the shape of a horseshoe.

The ground plan of a ruin on the mesa rim near the Twin Towers is rectangular in form, measuring 19 feet 6 inches long by 10 feet wide; with walls standing 11 feet in altitude. The doorway in the middle of the north wall was protected by fallen walls, extending to the edge of the cliff. The masonry as a rule is rough; projecting ends of rafters indicate a building two stories high.

Another variety of ruin in this group is Unit-type House, a compact rectangular pueblo situated on the eastern rim of Square Tower Canyon. This is the simplest form of a unit type of pueblo, and is composed of a centrally placed circular ceremonial room surrounded by six secular rooms. The building was oriented nearly due north and south; its western wall, which formerly rose perpendicularly from the edge of the canyon, was much broken down and the component stones precipitated over the cliff.

The central kiva was constructed of exceptionally fine masonry, enough of the walls remaining to show an internal structure identical with cliff dwellings on the Mesa Verde. It formerly had a vaulted roof like those at Square Tower House.

Stronghold House is composed of a cluster of small rooms, one of which is situated on the north edge of the mesa somewhat east of that last mentioned; another was built on the sloping inaccessible top of an angular pinnacle of rock. Notwithstanding its mutilation enough remains to render it a most picturesque ruin. From below it resembles a square tower, but when viewed from the south it is seen to be composed of a series of connected rooms perched on an inaccessible rock.

The second of the three groups that compose the Hovenweep Monument is situated north of the first in Holly and Hackberry canyons. Its ruins either cluster about the heads of small canyons

or are situated on the tops of fallen rocks. Their masonry is particularly fine.

The most imposing ruin in this group is a great house, Hackberry Castle, which is rectangular in form, measuring 31 by 9 feet, and 20 feet high, standing on the edge of the canyon. Evidences of two rooms appear on the ground plan, one of which is 14 feet long, the other 12 feet, inside measurement. The partition separating the two rooms is not tied into the outer walls, an almost constant feature in ancient masonry. The ends of the rafters can still be seen in the wall at a level 12 feet above the base.

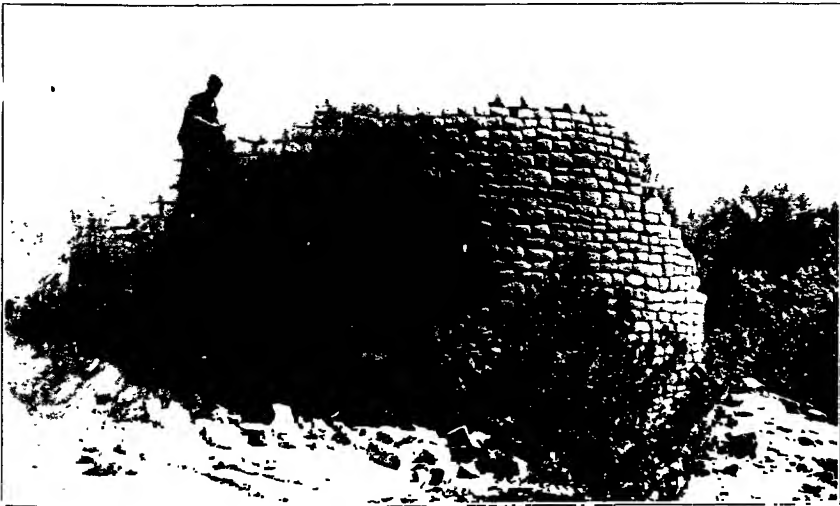


FIG. 38.—Horseshoe House, Hackberry group, Hovenweep National Monument

A building with high, conspicuous walls situated a short distance north of the last mentioned also rises from the canyon rim. The section of standing walls indicates that the ruin was about square or of semicircular form. The entrance into this room may have been through the floor of the ground story.

There are in this group two or three towerlike buildings closely approximated which show some of the finest masonry known in this monument. One of the most conspicuous is a tower with two rooms, one narrower than the other, as if constructed at a different time. It measures 17 feet long by 8 feet

wide; the most conspicuous wall at the southeast corner is 12 feet 8 inches high. This ruin has a fine doorway, wide above and narrow below, in the north wall. The approach at present is difficult on account of the height of the rock on which it stands, and the evidences of a former trail appear in aboriginal footholes cut in the solid rock.

Horseshoe House, situated in Hackberry Canyon a mile northeast of the cluster in Holly Canyon, is particularly instructive from its semicircular shape enclosing the remains of a circular tower, with which it is connected by radial partitions.



FIG. 39.—Cool Spring House, Cajon group, Hovenweep National Monument.

Horseshoe House (Fig. 38) stands on the north edge of the canyon. Its south wall is straight, and the well-preserved north side curved. The southeastern corner formerly rested on a projecting rock, which recalls the cornerstone of Sun Temple. The masonry of most of the southern section of the enclosed circular room or tower has fallen down the cliff. While the form of Horseshoe Ruin recalls that of Sun Temple, its structure is widely divergent. The length of the south wall measures 30 feet; the width of the ruin 27 feet. The highest wall is on the northwest where it is 12 feet. The distance between the outer and inner concentric walls averages 4 feet; the central room measures 17

feet in diameter. In a cave below Horseshoe House there still remain well-preserved walls of a cliff dwelling.

The third group of ruins in the Hovenweep Monument is situated at the head of a small canyon on the Cajon Mesa a few miles west of those already described. To the largest ruin (Fig. 39) of this group, the author has given the name Cool Spring House on account of the fine drinking water in the canyon below it. This ruin would well repay extensive study and contains features not yet described in other ruins.³

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³ For further details cf Bull 70, Bureau of Amer Ethnol and vol 68, no 1, *Smithson. Misc. Colls*, 1917.

THE HOPI WÖWÖCHIM CEREMONY IN 1920

By ELSIE CLEWS PARSONS

THE PERFORMANCE AT WALPI, NOV. 18-28

ON LEAVING First Mesa in June, 1920, I was urged by my host to return in November—they were to have the *wöwöchim wimi* or ceremony in its extended form, the form when they initiate, of sixteen days, a performance last held in 1916. This extended ceremony is called *natöñña'*,¹ "putting them [i.e., the initiates] in." The same term is used for initiation into the women's ceremonies (*mamsrau* and *lalakuntē*) when a lot of young girls are taken in at the same time. The term *natöñña'* is not used, I was told, for initiations into other ceremonies.

On November 20, I arrived at Sichumovi, the suburb, one may say, of Walpi. "They called it out yesterday," said my host, "but they decided not to initiate; they decided that only four days ago (November 16)." "Who decided?" "The *mongwiltu*,² Singers chief [Hani,³ Tobacco clansman] is the one to put in the boys. He is too old for it, he himself told them. And he has taught nobody [i.e. of his connection]⁴ how to do it. None of

¹ The ceremony is *not* called *naishmaya* (see p. 157), a Keresan word meaning father-mother; that is merely a word in a song, referring obviously to the ceremonial father or initiator.

² The chiefs. The theocratic council of Walpi consists of the *gigmonga'i*, chief of the houses, i.e. Town chief, the chief of the Bear clan who traditionally resigned his office of *gigmonga'i* to the Millet (*leh*) clan chief or chief of the Flute ceremony, the Coyote clan chief, the chiefs of the ceremonies, *wöwöchim*, *tataukya* (Singers), *kwan* (Agave), *ahh* (Horn), *soyala* (winter solstice) and Antelope, the Sun watcher, the Crier chief, *chaakmonga'i*, who is also the Snake clan chief, and the *kalehktaka* or War chief.

³ He has acted since 1898 or before as the American chief or Governor who is chosen by the Indian agent. "The Town chief could not take this position."

⁴ Properly he should have had in apprenticeship, probably for some years, a nephew, i.e., a sister's son, or even a clansman less closely connected. . . . On a vacancy in ceremonial office, left unfilled by the deceased, the senior member of the clan will call a clan meeting. To the office the senior member has first claim, then volunteers within the clan are called for; they failing, the office may be filled first by a "child of the clan," related through the family of the deceased, then by any "child of the clan," i.e., son of a clansman.

them would learn from him. Unless the chiefs find somebody, they may never have the ceremony again, like Oraibi."

Voth, writing in 1901, states that for several years the *wōwō-chim* ceremony in its extended form had lapsed at Oraibi⁶ and he urged a thorough study of the ceremony on First Mesa. In November, 1891, Mr. A. M. Stephen was at Walpi and his notes on the ceremony were published in the *Journal of American Folk-Lore* (Vol. V, (1892), pp. 189-221) by Dr. Fewkes. Observations of the ceremony in its short, non-initiatory⁶ form in 1892 and 1893 were also made again by Mr. Stephen, and published by Dr. Fewkes with his notes in the *Proceedings of the Boston Society of Natural History* ("The Tusayan New Fire Ceremony," vol. 26 (1892-5), pp. 422-458). In 1898 Dr. Fewkes observed the non-initiatory form of the ceremony.⁷

Dr. Fewkes and Mr. Stephen were admitted into the kivas, for a part of the ritual, but even Mr. Stephen was precluded from seeing the more esoteric parts of the ceremony, the initiatory parts, a "synopsis" merely he rather too modestly calls his account. Times have changed, and friendly as the Hopi still are to acceptable Whites, they are much more exclusive. I get the impression, than they once were; they have not wholly escaped the wave of exclusiveness that in recent years has swept over the Pueblo tribes, and today I doubt if any White would be admitted to any kiva ritual. That I was not admitted, although my head had been washed and I was known by the Hopi name my ceremonial father had been pleased to give me (disregarding the names given more formally by his "sisters") and although I put it up to "my father," one of the chiefs, making my request a day or two after I had presented him with four macaw tail feathers for the remaking of his *tiponi* (corn-ear fetich), was charged to sex. "You are within the Hopi rules," I was told, "but you are a woman and women may not be admitted." There were more than one

⁶ "The Oraibi Soyal Ceremony," Field Columbian Mus. Pub. 55. Anthropol. Ser. vol. IV, no. 1, p. 10.

⁷ However, the Agave society initiates in the abbreviated ceremony. (Ibid. p. 99.)

⁸ American Anthropologist, II (N. S.), pp. 80-138.

whom that explanation did not satisfy, I may say incidentally. "That was just like a Hopi," observed later my Tewa interpreter. "They are so afraid. He was just putting you off."

But whether due to social timidity or to Hopi anti-feminism I was put off quite successfully, and the following account is therefore even more syncopated, in many particulars, than the Stephen-Fewkes accounts. It should be read in connection with these accounts. Its value lies in the fact that the observations, limited as they are, are made over two decades later and contribute therefore to the historical record—as well as in some interpretative information I was able to secure.

This begins with a narrative of the smoke talk on November 18 and the calling out on the dawn following, two rituals preliminary to every ceremony: "Singers chief³ has been watching

TABLE 1. KIVA NAMES—CHIEFTAINCIES OF KIVAS AND OF *Wowochim* SOCIETIES BY CLAN

1. Goat (*tsicato*) kiva
Yucca blossom stem (*kwan*) kiva

Kiva chief, Reed (*pakabi*) clans-man
Kwan chief, *patki* clans-man
2. Horn (*akl*) kiva
Horn kiva

Kiva chief, Millet clans-man
Horn chief, Reed and Bear clans-men
3. Central (*nastibi*) kiva (not used in *wowochim* ceremony)
Kiva chief, Snake clans-man
4. *Wikalibi* kiva
Wowochim kiva

Kiva chief, Mustard clans-man
Wowochim chief, Lizard (Snake) clans-man
5. Chief kiva
Singers kiva

Kiva chief, *patki* clans-man
Singers chief, Tobacco clans-man

³ See Table 1.

the sun for *wöwöchim* chief, watching the setting sun. He watches always during the November moon, but it is not the moon he watches, but the sun. The moon may be at the crescent or past. On the day indicated *wöwöchim* chief tells Crier chief to go that night to his house [i.e. the house of his mother or sister].⁹ Next he tells Singers chief, next Agave chief, and last Horn chief; all are to go to his house. He gets his bag of Indian tobacco and his pipe, he sits down, telling his relatives he is going to smoke.¹⁰ Soon the other chiefs come in. Singers chief sits next to *wöwöchim* chief; next to Singers chief sits Agave chief; next to Agave chief sits Horn chief. *Wöwöchim* chief fills his pipe, blows the smoke out four times, and hands the pipe to Singers chief who repeats and hands the pipe on to Agave chief who repeats and hands it on to Horn chief who repeats and hands it on to Crier chief. He smokes and returns the pipe to *wöwöchim* chief. Now all light up their own pipes and smoke in any order, passing their pipes as they wish. It is only the first pipe that must be passed to the right [i.e., in anti-sunwise circuit]. Now Crier chief asks *wöwöchim* chief why he wanted them to come and smoke. *Wöwöchim* chief answers, 'It is time for you to call out my ceremony. In 8 [or 16] days we will have the *wöwöchim* ceremony. We must take care of ourselves and of our children (i.e., all the people), and live long.' Then all the other chiefs in turn say the same thing to Crier chief. They finish; they go home to sleep—all but Crier chief. He goes to his own house; he sits up smoking half the night. Then he sleeps awhile. Then at dawn he goes to the roof to watch the sun. As the sun comes out, he turns to the north,

⁹ In 1893 it was the maternal house of Singers chief to which they went (Amer. Anthrop., II, p. 83, n. 1), in 1898 the maternal house of *wöwöchim* chief, i.e., the house of Wukomana (see p. 180, n. 51). I take it that between 1893 and 1898 the mother of Hani, the Singers chief, died. It will be interesting to note whether with Hani's successor the smoke meeting will be reestablished in the maternal house of the Singers chief or will continue to take place in the house of the *wöwöchim* chief. . . . It is through such details that Pueblo Indian conservatism may be estimated.

And who will be Hani's successor? Since he is said to be the last male of the Tobacco maternal family (Personal information from Dr. R. H. Lowie.)

¹⁰ 'They are going in to have a smoke,' is the term of reference for this assembly or for the preliminary to any ceremony. "By hearing that they are going to smoke is the way we know when the ceremony is to be."

the west, the south and the east; he throws corn meal and corn pollen to the sun; he calls out the ceremony."

After this call, *wōwōchim* chief and Singers chief each takes the *pūtabi* [the long cotton string with downy eagle feather [that Voth quite appropriately calls "road-marker"]] each has made to the narrow ledge leading from Sichumovi to Walpi. *Wōwōchim* chief puts his road-marker down; then Singers chief adds his to extend the other. The feather-string represents a road, a good road for the people. On the feather-strings the two chiefs sprinkle corn meal and corn pollen. Corn meal is for life; corn pollen is for the season, the summer season. ("Meal and pollen always mean these same things.") On November 21, on my way to Walpi, I noted a feather-string, one only, lying bunched up on the trail. The other feather-string, no doubt, as well as the meal and pollen, had been blown away.

On the day of calling out there had been, as is usual, a rabbit hunt. It was a small hunt and the hunters kept their quarry for themselves. In the extended ceremony the rabbits would have gone to the initiates.

Our count in accordance with what has been called a nine¹¹ day ceremony is as follows:

1	<i>tuñaz</i> (calling out)	November 19
2	<i>tuñaza sustala</i> (<i>susa</i> , first, <i>tala</i> , sun or day)	November 20
3	<i>tuñaz, lohstala</i> (<i>lohma</i> , second)	November 21
4	<i>tuñaza paistala</i> (<i>payisa</i> , third)	November 22
5	<i>tuñaza nalohtala</i> (<i>nalohta</i> , fourth or <i>yuñya</i> (they [i. e., the chiefs] have gone in)	November 23
6	<i>yuñya sustala</i> or <i>soshkahimu</i> [once not anything (Voth) all do nothing (Stephen)]	November 24
7	<i>kumul totokya</i> [they go for wood, sleep (Stephen)]	November 25
8	<i>totokya</i> [they get food ready and feast]—the night which follows society members may stay in the kiva, engaged in ceremonial, also called prayer-stick making (Stephen)	November 26
9	<i>kukyiba tihuwā</i> ("everything over")	November 27
10	<i>at'at' nyiwa</i> (to take a walk, but used only in this post-ceremony sense, and meaning to be on mere pleasure bent)	November 28

The first four days, from the calling out to *yuñya*, November 23, there appeared to be no activity in or out of the kivas; no *nachi*,

¹¹ The Hopi themselves count the days of the ceremony as eight. The evening of the smoke assembly is not counted in, nor is the day of calling out.
Cf. "The Oraibi Soyal Ceremony," pp. 14-15.

the standard at the kiva which indicates that ritual is in progress, was in position. On November 23 I was in Walpi before sunrise. An old man, presumably the chief Sakwistiwa (see p. 179) was coming down the ladder of Goat or, as it is called during the ceremony, Agave kiva, and a few minutes after sunrise the standard of corn husks and feathers fastened to a stalk of agave was in position. Horn kiva was visited by the chief, Kotka, and by an older man, presumably Wonita, who was carrying prayer-sticks.¹² Neither this morning nor at any other time was there any standard to be seen at this kiva, just as in 1892 and 1893 no standard was up¹³. . . . At 2 P.M. a standard was up at *wik-walibi* kiva, but none at Chief kiva. On the roofs of all four kivas, opposite the ladder, were bundles of fire wood. . . . Towards 5 P.M.¹⁴ I was told that it was time "to go see them bring out the fire." Men blanketed and carrying an ear of corn, their "mother," were on their way to the kiva each was associated with in this ceremony. A young man was carrying a bundle of small horns into Horn kiva. . . . At 5:15 twelve men came out in line from Agave kiva, the leader carrying a basket of meal and a rattle of bones, and next to him a young man nude to the kilt, with a cotton dance kilt, a bunch of downy feathers on top of his head, and his hair flowing, his face painted in white, in one hand a fire drill and cedar bark, in the other a terraced medicine bowl filled with a red fluid. Over all he wore loosely an American woven blanket. The other men were all in ordinary clothes, and blankets. The hair of some was flowing. Each carried a cowbell. The last carried the standard. They descended into Chief kiva. In about three minutes six men emerged from Horn kiva. These I watched

¹² During the day only the chiefs were in the kivas, I was told. The members go in only towards evening. From now on the members sleep in the kiva. They go home to fetch food; but they would not visit around. Even at home they must be circum-spect. They remain continent, and there is a taboo on physical contact with off-spring. Were a child to touch his father during this period, the child would have to be fumigated with cedar wood smoke, and they would *nabwola* (dis-charm or exorcise, Zuñi, *shu, aha*) the child with ashes, waving the ashes four times around the child's head.

¹³ In 1898 a standard of a cap such as is worn by Horn society members was put up on the seventh day. (Amer. Anthropol., II, 82.)

¹⁴ In the afternoon Singers' chief has called out for the men to go to the kivas, and after their early supper the men go.

descend into Chief kiva and saw each before descending hold meal to his mouth (*humuya*), and then throw it down the hatchway. Their leader carried a basket of meal with prayer-feathers (*nakwakoshi*). All were in ordinary clothes. This set was followed by another set, also of six men, from *wikwalibi* kiva. At 5:35 singing began in Chief kiva and lasted nine minutes, and within one minute after the singing stopped smoke came out of the hatchway. I was sitting with some children and two women on the roof of the house next to Chief kiva and I was struck by the way the women and children drew back in mild panic from the smoke. It was fairly obvious that there was conceived to be danger of a kind in that smoke¹⁵. . . . Ten minutes later a man carrying flaming cedar bark emerged and went down *wikwalibi* hatch, to go on, I presume, to the other two kivas with the freshly kindled fire. In about three minutes, from eighteen to twenty men emerged from Chief kiva to stand in single file at the tunnel exit to the south. Through the tunnel and down the terraces they disappeared, probably to the shrine of *tüwapoñtumsi*, Earth Altar Woman.¹⁶ Again in about three minutes the set of twelve Agave society members emerged from Chief kiva, returning to their own kiva. The medicine bowl had been left in Chief kiva and the baskets of meal disposed of there. Firelight glowed through the hatch of Chief kiva, left in silence. The ceremony in the kiva had lasted less than half an hour. "How long did it take to make the fire?" I was asked eagerly by my household on my return.

On November 24, at 2 P.M., the standards were up at all the kivas except Agave kiva. Smoke was coming out from Agave kiva, and from within *wikwalibi* kiva one could hear voices. I learned, too late, that before sunrise they had come out from

¹⁵ See "The Tusayan New Fire Ceremony," p. 443, "The New-Fire Ceremony at Walpi," pp. 95-97, Voeltz, H. R. "The Oraibi Summer Snake Ceremony," pp. 352-3, Field Columbian Mus. Pub. 83, Anthropol. Ser., vol. III, no. 4, 1903.

¹⁶ Probably this spirit is to be equated with *iyahwi*, Earth Mother of the Keres, and Mother of *masaw*, Keres, or *masaw*, Hopi, the war spirit of the new fire ceremony. (See p. 173.) In Earth or Sand Altar Woman's shrine is a piece of petrified wood (Amer. Anthropol., II, 96), an object commonly associated with the war supernatural.

wikwalibi and danced along the mesa, the women coming out to throw water on them, "just as when the corn comes up, the clouds drop water on it." That is, the dancers are representing the crops, the women, the clouds. "Watching" the dancers are two Horn society men, "so nothing would do them harm, so nothing would eat the crops when they are up."

The next day, November 25, the *wöwöchimtu* were to come out again before sunrise, so I went over to Walpi to wait for them. "Be sure you do not go in front of them," I was instructed. If anybody goes in front of them,¹⁷ he or she is afflicted with *toshri-rigö*, twisting. The mouth goes crooked.¹⁸ It is an affliction the *wöwöchimtu* cure, and, thus afflicted, one would have to join the *wöwöchimtu*, if a man; if a woman, after treatment by the *wöwöchimtu* she would contribute food to them. I presume at the final feast of the annual ceremony. (See p. 172.) This is one of the many instances, familiar in Pueblo Indian practice, of identity between the causers of disease and its curers.

At Agave kiva and *wikwalibi* kiva, standards were up, and in the latter and Chief kiva voices were heard. There was a very lovely full moon about to set, and the sun rose. Individuals emerged from the kivas to take firewood down the hatch, but none came out to dance. "Did you see them?" asked my host on my return. "No, they did not come out." "They did not come out! No breakfast then for them; that is the rule." From our household there were three members among the *wöwöchimtu*, and yet it seemed impossible to learn when those *wöwöchimtu* were to dance. I was told that after all they would eat breakfast in the kiva and then come out to dance. At 9:30 A.M. I went back and waited. There were planks as if for seats on top of Horn kiva, and six stone fire drills¹⁹ along the kiva edge. G'aweh-

¹⁷ At Taos none may go close to the Black Eyes, the clown society

¹⁸ Like the mouth of the kachina *he'he'a*.

¹⁹ There may have been some night fire ritual of which we have no record, perhaps in connection with initiations into the Agave society. (See p. 165.) The day before men from Horn and Agave kivas go for wood, during which trip they also hunt rabbits. On their return the women make fun of them. Horn and Agave societies are unfriendly to the women, and Singers and *wöwöchimtu*, friendly. "The women say that their friends kill more rabbits than the men of the other kivas."

tima, chief of the *wōwōchintu*, was outside of the kiva making yellow pigment (*sikyabi*);²⁰ there was no sign of preparation to dance. The fact was they had already been out, at about nine o'clock, just after I had returned to Sichumovi, and before they breakfasted in the kiva. It is a rule peculiar to the *wōwōchintu* to dance before breakfasting.

This day, November 25, we heard that there were to be no outside doings on First Mesa, except that bringing in of wood from which the day is named, but that the day was *totokya* or the eighth day, devoted to public ceremonial, at Mishongnovi on Second Mesa. They were one day, as it happened, ahead of First Mesa in the celebration. So we drove over to Mishongnovi. The performances seen there I will describe in a comparative note in conclusion; but I mention the fact of our absence from First Mesa until after sundown of this day, to indicate that the statement that nothing ceremonial occurred outside during the day is at second hand, and perhaps open to question.²¹

After our return to Sichumovi, about seven o'clock, a kinswoman came in to borrow for her²² son one of the cowbells hanging in our store room, incidentally asking me to bring her a cowbell on my next visit. About eight o'clock the noise of cowbells was heard. Agave society men were approaching. I started for the door. "Don't go out," ordered my host. I started for my room to look out of the windows; the windows of the family room were covered with shawls. "Don't look out of your window," again ordered my host. Characteristically enough he gave me no reason at the time, and I forebore questioning. At a more auspicious moment I learned that were any one to go out and encounter the night patrols of the Agave Society or of the Horn

²⁰ Colored with the bloom of *sibabi* (*Bigelovia bigelovii*), the body paint for the *wōwōchintu*. The plant also serves as a pigment in the basket trays.

²¹ During the corresponding day in 1898 as well as the day preceding the *wōwōchintu* came out to dance throughout the day. (Amer. Anthropol., II, p. 98.)

²² This bell came down to my hostess from her father, a Badger clansman who had served as *makwanta*, medicine maker and sprinkler, to the Agave society. (The position of *makwanta* is filled by a Badger clansman or by a child of Badger in every ceremony. Badger is the doctor, the possessor of medicine.) The father's sister's son of my hostess has taken his mother's brother's position as *makwanta* to the Agave society, and the bell is now to remain in his possession.

society *alosaka*, as they are called, their legs would stiffen. Any one who happened to be out of doors at this time, on hearing the bells or rattles, would go into the first house at hand. Not only would the leg joints of a venturesome person grow stiff, but by his violation he would check the fall of snow or rain that the night patrol of the *alosaka* and Agave society men is believed to induce.²³ At 8:40 this evening I heard the rattle of the *alosaka*, and voices shouting *ôjô! ôjô!* Good bye! (?) Good bye!

On November 26 I reached the southern end of Walpi before sunrise, to hear singing to the drum in *wikwalibi* which lasted for three-quarters of an hour. At this kiva the standard was up. Some time after sunrise the standard at Chief kiva was set up. From both kivas men came out to stretch themselves and to stow away bedding of sheep pelt or blanket on the ledge of the house next to Chief kiva. Five minutes after sunrise two women brought to Chief kiva a large flat oblong basket of *piki* (wafer bread), with four flat cakes on top at the corners and a bowl in the center, ceremonial food.²⁴ Within a few minutes the same things were brought by three women to *wikwalibi*. Men emerged from both kivas to carry wood down from the bush piles, or to throw away the rinds of watermelon heaped outside the hatchway. Again I had missed the dance, which occurred this morning a considerable time before sunrise. . . . All the early morning dancing²⁵ of the *wŏwŏchimtu* is said to be in undress.²⁶

This morning for two or three hours Walpi was alive with men passing along, carrying dance paraphernalia, all the men showing freshly washed hair. (The hair of the young *wŏwŏchimtu* son-in-law in our house had been washed there. After the dance he was to be washed in his mother's house.) It was 11:25 before the *wŏwŏchimtu* emerged from *wikwalibi* to dance. As usual when a

²³ Noted in 1891 "Every house was dark and no inmate was visible" (JAFS V 206.) Mr Stephen was unaware of the risk he ran that night in touring the house roofs.

In 1898 the patrols of the Agave society were connected with an initiation. Dr. Lewkes was told (Amer. Anthropol., II, pp. 99-100.)

²⁴ Cf. "The Oraibi Social Ceremony," pl. XIII.

²⁵ I am guessing that the early morning dancing of the *wŏwŏchimtu* is due to their association with Morning Star. See p. 166

²⁶ I.e., in ordinary clothes. In 1898 they were nude (Amer. Anthropol. II p. 98.)

dance group comes out of a kiva, the drummer was out first, to beat the drum summons. G'awehtima followed with the standard, and then the others, forming in two lines, eight on one side, eleven on the other, the drummer between, and at the head of each line a Horn Society man. At the end of one line stood an old man with another standard.²⁷ It was Iastöpi, a Tewa²⁸ man.

The two Horn Society men, together with some Agave Society men who were to join the dancers on later appearances, were the boys to be last initiated into the ceremony, i.e., into any group of the ceremony. The rule is that the most recent initiates dance with the *wöwöchimtu* until their place is taken by new initiates. Their initiation is not concluded until a subsequent initiation is held, "they finish putting them in this time." One of the two Horn Society men in question was a young man from our household, aged twenty. He had been put in when he was sixteen.

All of the *wöwöchimtu* were kilted, some with fox skin pendants, some without. All were barefoot, their feet painted yellow, also their legs and forearms. There was a band of yellow pigment around the chest, and on the upper arm three parallel horizontal stripes in yellow. Yarn was tied under the knees. Some wore a broad red bandolier and two wore above the forehead a star cut out in blue-green paper. In later appearances all wore this star²⁹ and all wore a large bunch of parrot feathers and of downy eagle feathers on the top of the head. That this was not considered a full-dress appearance of the group was evident, not only from the fact that several fox skin pendants and feather headpieces were left hanging to the house wall north of the kiva, but likewise from the *négligé* of the two Horn Society men.

²⁷ Or, as Fewkes states, *keltakwa*, a stick of office, in this society the same as the *nachi* (Amer. Anthrop. II, 111, n. 1). The Zuñi equivalent is, I infer, the *telanne*.

²⁸ Taken in presumably because of sickness. Ordinarily Tewa boys are not initiated. "The old people told the Tewa boys not to go into *wöwöchimtu*; they would have trouble if they did," a Tewa said to me. "So we minded the old people. We were afraid."

²⁹ This forehead star is used in the *wöwöchim* ceremony of Oraibi by the one whom Voth calls the Star priest in the winter solstice ceremony and describes as twirling the sun image (The Oraibi Soyal Ceremony, p.55 footnote). Morning Star is associated throughout Pueblo ceremonial with the war god, who is thus scout to Sun.

They were dressed in their ordinary clothes, a turtle shell rattle tied over trousers under the right knee. Antelope horns were in the left hand and a rattle of scapula bones in the right. In later appearances the Horn Society men carried a chief's stick and an ear of corn. Under the left eye and on the right jaw was a dash of white pigment.

After all in the two lines were in position and the two Horn Society men had joined them, the drummer started the dance with a call, and all but the Horns began to sing, all side-stepping to the south, i.e., moving down between the kivas. They held hands with fingers imbricated. After a few feet of progress the group would side-step back on their route; but only for a distance shorter than they had progressed. Arrived at the end of the cramped dancing place, the Horn man of the west line side-stepped with his line to the east side, the Horn man of the east line side-stepping with his line to the west side, the two lines passing each other in this formation. The two lines now moved northwards with the same side-step under the covered passageway and on through the town. As they passed by Horn kiva and Agave kiva, a man came out from each kiva in turn to asperse them, aspersing first to the south on the passing dancers and then aspersing in the other directions, sometimes with care, sometimes with a single careless sweep. I noted that it was Kotka who aspersed at Agave kiva. This aspersing with two eagle wing feathers from a medicine bowl from the roofs of the two kivas occurred whenever any group of dancers passed by. The kachina dancers of Zuñi on their entrance into the dance house are aspersed in the same way by the director of the medicine order of the society singing for the dancers.

The *wöwöchintu* danced on past Horn kiva to the widening of the street beyond, where they executed the same turning movement as at the other end of their course whereby the Horn men were brought up into the lead of the group. All then danced back to *wikwalibi* kiva, the entire dance having taken about half an hour. The Horn men waited until all the *wöwöchintu* had descended into the kiva, when they picked up a basket from the roof and a brush and proceeded to brush up the ground under

the roofed passage to the north, preparatory to the next emergence of the *wōwōchintu*.

From the singing from within *wikwalibi* I inferred that the *wōwōchintu* were repeating their dance movement within the kiva. At 12:15 three Agave Society men appeared from up the street and descended into *wikwalibi*. They wore the characteristic headdress,³⁰ a gourd cap covered with down with eight or more feathered strings hanging over the face. In one hand each carried an ear of corn, in the other their Chief's stick. They were kilted, the upper part of the body nude but for necklaces and a bandolier of yellow and green yarn, and they were beautifully painted, right side of chest and right shoulder blue, left, yellow, with right leg and right foot blue and the left yellow; the right forearm yellow, and the left forearm blue. Down the chest

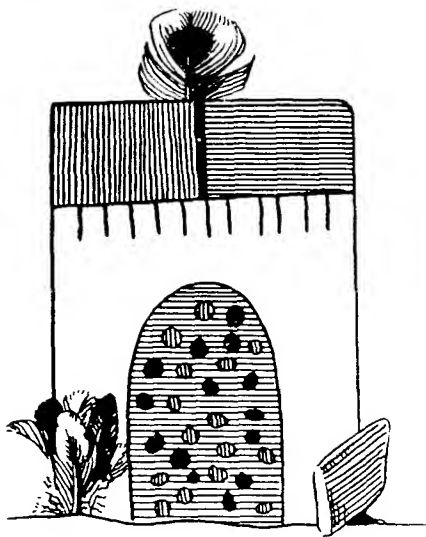


FIG. 40.—Agave society prayer-stick. Vertical hatches, blue; horizontal, yellow; black and white, same; above, white feather with black spot, below, eagle feathers to left, honey package to right.

and the upper arm were vertical streaks of blue and yellow. At 12:50 the Agave men emerged, followed by the drummer and the others. The third Agave man stayed in the rear of the dancers. This second performance took the same amount of time as the first. In the third performance, at 1:50, a Horn Society man had joined the group. The horn of his cap was from a mountain sheep and painted white. The dabs under his left eye and his right jaw were blue. He wore a buckskin cloak.

At 2:40 the *wōwōchintu* made a fourth appearance; the fifth appearance I missed; at 4 they were performing again, and again for the last time at 5, totaling seven performances for the day.³¹

³⁰ See Amer. Anthropol., II, pl. IV

³¹ For the non-dancing *wōwōchintu* or at least for some of them participation in the ceremonial was at an end earlier in the day. About three in the afternoon I saw

Meanwhile, at 1:25, a single figure, *kwanita* he is called, meaning, I think, Agave owner, ran from Agave kiva the length of town and down the trail under *wikwalibi* to the foot of the mesa and through the broken plain to Sun spring. He made the distance in three minutes. It took him but a minute or two to place the prayer-stick he carried in the mud at the edge of the water, on the west side of the pool, facing east—I visited the spring the next day to sketch the prayer-stick³²—and to fill his gourd bottle with water, and he was back up the trail in about a quarter of an hour. *Kwanita* was kilted and his body painted, the right shoulder blue, the left, yellow. On his back was fastened a sun tablet, girt with red horse hair and eagle feathers and topped with eagle feathers. In one hand he carried the standard, in the other, a bell, an ear of corn, and the small netted gourd bottle which he filled at the spring.

Soon after *kwanita*'s run, about 2:30, four Horn men emerged from their kiva to make a visitation to the broken ground at the foot of the mesa, on the east side about opposite the Middle place of Walpi where they stooped to the ground, presumably sprinkling meal, and then returned to the road where again near by they stooped to the ground, and then on up the trail just south of Sichumovi. These Horn men wore a buckskin mantle across the shoulder, and in a patch of sheepskin across the forehead were set the two small horns of the female mountain sheep. They carried a scapula bone rattle.

About this time there were also going about town, Walpi and Sichumovi, going in pairs, Horn men, Singers, and, I was told, Agave society men, to collect the meal³³ that was to be sprinkled on the trails the following morning. The Horn society couple

one man holding in his arms the infant of the household—a sure sign that he was out of the ceremony—See p. 161, n. 12

³² See Fig. 40. As far as I could see it differs from the prayer-stick presented in JAFLE 219, no. 4, in having an eagle feather at the back and in having an oblong with a rounded top to represent the corn instead of a diamond-shaped figure. For these features see the similar prayer-stick used in the Flute ceremony of Shipaulovi (J. Amer. Ethnol. and Archaeol., II, 131)

³³ *Numansospala* > *numani*, meal, *sospala*, collecting by passing a container, in this case, a basket, around. In making up purses for horse races a hat is passed around and this is called *shiba* (money) *sospala*.

that I saw wore the large sheep horn, and buckskin mantle.³⁴ Their faces were whitened all over with zigzag lines. The Singers wore ordinary blankets. There was a red line across the eyes and temples and another across lips and cheeks, the rest of the face being painted yellow. The hair was done up into a poke over the forehead with corn husks. In the basket of meal each carried was a prayer-stick of the winter solstice type, a willow wand with pendent prayer-feathers, four of them. In the meal basket of the Horn men were two blue-green or blue-green and black prayer-sticks with turkey feathers and sprigs of yellow bloom. As the couples passed under the house terraces, the women came out to drop a handful of meal into each basket.

At 4 P.M. I found that a large singing group, 17, of Singers had come out, with two Horn men to stand one on either side of the group, but quite a little distance away. Each Horn man carried a pair of large elk antlers, and wore over the forehead the tiny pair of horns in the sheepskin head band. Mouth, nose and chin were whitened. A turtle-shell rattle was fastened under the right knee, over trousers; a scapula-bone rattle was in the right hand and in the left an ear of corn. These Horn men remained very sober in view of the antics of their group and I was told that were Horn men while acting as guides or warriors (*kalehtaka*) to Singers or *wöwöchimtu* to laugh at them or their jokes the Horn Society would be fined, i.e., would have to give tobacco or watermelons, etc., to the Singers society or *wöwöchimtu* or would have to fetch them wood. So while the Singers are joking against the *mamsrau* women (see below), they are at the same time keeping an eye on their *alosaka* (Horn men). Were the *mamsrau* women to throw water by mistake on the *alosaka*, the women in their turn would be fined for the benefit of the *alosaka*.

The Singers were nude to the waist, most wearing breech-cloths, though some were in trousers. Around the neck was a piece of black cloth or beads. The face was painted yellow with red streaks across lips and eyes as already described, and the hair was done up in a corn husk poke over the forehead. In each ear was a rabbit-fur pendant. On the back of one dancer, perhaps of

³⁴ See Amer. Anthropol., II, pl. VII

others, was a phallic sign painted in red, in shape like a *w* with a line across the top. A similar sign was painted on the drum. In the left hand was carried a stick to which was fastened a *w*-shaped piece of watermelon rind with red edges and in the center a bit of black hair, a fairly realistic vulva.³⁵ In the right hand was an ear of corn. The dancers stood bunched together, singing a lively song at the women who came out on the terraces or into the street to talk back at them in a shrill artificial voice, or to throw water on them. The Singers danced down the length of the town and back, stopping in front of certain houses for a whole song. At one time they and the *wöwöchintu* were almost alongside; but neither group paid the slightest attention to the other, each singing its own song. The song of the Singers was that which had been sung in the Buffalo dance held a few days before, November 20, 21, set to new words.

This dance of the Singers appears to be a burlesque of the dance of the *mamsrau* ceremony, one of the three women's ceremonies. In the *mamsrau* dance there are certain girls called *pal'hikilipkomana* (*pa*, water; *hiko*, drink; *tipkomana*, dance girl). Were it to rain during the dance, these girls would drink the rain water. Now the Singers, I was told, "were pretending to act like those girls."³⁶

The water-throwing and vociferous women were said to be members of both the *mamsrau* and the *lalakuntē* ceremonies.³⁷ (The former ceremony has been extinct on First Mesa for some years, since Saliko, the woman chief, became a Christian and

³⁵ These sticks together with corn husks in headdress and rabbit-fur earrings are subsequently thrown away off the west side of the mesa, back of one of the most southerly of the Sichumovi houses. This in the final discharming rite. (Cf. Amer. Anthrop., II, 118.)

³⁶ In 1898 five of the fifteen dancers were dressed as women. (Amer. Anthrop., II, 109.)

³⁷ Both these ceremonies are to cure skin disease, the diseased being "given to" a member of the ceremony. The sore of *lalkuntē* is round, leaving a hollow, presumably syphilitic; the sore of *mamsrau* covers the body. Diseased men were also taken into both ceremonies, but men members of *lalkuntē* go in only four times, i.e., belong in the group only for four years. Insects cause the diseases. *Chatē*, a white insect which looks like an ant and eats wood causes the *mamsrau* disease (Cf. "The Tusayan New Fire Ceremony," p. 451); an insect called *kaichuku* causes the *lalkuntē* disease.

moved off the mesa.) The Singers and *wōwōchintu* are said to be brothers of the *mamsrautu*³⁸ and friends of the *lalakuntu*, and the Horn society men and Agave society men, brothers of the *lalakuntu* and friends of the *mamsrautu*. Theoretically it is the brother-sister group which revile each other.³⁹ The sister-brother relationship is said to be due to the fact that once the respective groups were united.⁴⁰

Now the feast was to begin. Even before the *wōwōchintu* had withdrawn from their final appearance, the women began to assemble with their bowls and pans and baskets of food, *piki*, *pikabiki*, *ōchapkwibi*, a stew of samp and mutton, dried peaches, sliced squash, etc. They formed in lines at each of the four kivas, each woman in turn giving her offering to the man who stood on the ladder and passed the gift to one below. As the woman handed over her gift she declared her name and to those below the man repeated the name with the suffix *tu*, meaning belonging to, "it is hers." The women made their presents to the kivas to which the men of their households belonged and, I think, the men of their family connection. Even the Tewa women who were married to Hopi men contributed. At the close of the feast in the kiva, the surplus of food—and there must have been a large surplus, so lavish were the presents—was distributed among kiva members to take back to their households. This food was fumigated (*kīkwitaya*) over cedar wood smoke, as were all the dance paraphernalia brought back from the kiva.

To our household, as it happened, much was returned—the kilts, belts and feathers, which were worn by three *wōwōchintu*, belonging to the man of the house, a Tewa man. He had loaned his things to his wife's "uncle" who took his meals with us, to her mother's sister's son, and to a son-in-law.

³⁸ At Mishongnovi the *mamsrautu* use the kiva used by the *wōwōchintu* (Lowie). At Oraibi the women had their own kiva (Voth, H. R., "The Oraibi Powamu Ceremony," p. 72. Field Columbian Mus. Pub. 61, Anthropol. Ser., III, no. 2.)

³⁹ The day after new-fire making Horn and Agave men have gone for wood for their kivas and have hunted. On their return the society women jeer at them, saying that they kill fewer rabbits than the men of the other kivas.

⁴⁰ See, too, "The Tusayan New Fire Ceremony," pp. 447-8.

Of the amount of food these men brought home to us I am not certain, but part of it, I can testify, was a most excellent dish of *öchapkwibi*. In taking the food from our house to the kivas I was asked to assist, my hostess having me follow her and pass the dish to her for her to pass to the man on the kiva ladder. It was a little innovation which she thought out for herself.

For the day after the feast a special food had been prepared to eat at home, *pigami*, a dish that figures prominently in marriage ceremonial, and that is eaten "after every dance." *Pigami* is made of a dough of corn meal mixed in hot water with sprouting wheat. The grains of wheat are sprinkled with water and left in a basket for two or three days over fire. This dough of corn and wheat is covered with corn husk and in a bowl baked over night in an outside oven. The *pigami* we ate on the morning of November 27 was presented to our household by the mother of our son-in-law.

On this day, November 27, after all-night ritual by all the societies excepting the *wöwöchim*,⁴¹ ritual which is presumably the culmination of the ceremonial, before sunrise trails of meal, the meal that had been collected from house to house, were laid to Sun spring, and to the shrines of *talatumsi*, Dawn Woman (in Tewa, Horn woman) who belongs to the Horn Society, and *kwapkwahikpö*, Broken Neck (*kwapi*, neck, *kwahikpö*, broken) or *masöwö* (*masawi*).⁴² In all the shrines the prayer-sticks are deposited which have been made the day before by all the societies excepting the *wöwöchimtu*.

After the three couples of prayer-stick depositors return, all society members go to the edge of the mesa and vomit. Later in the morning everybody has his or her head washed.

⁴¹ Having danced all day, it was explained, they may sleep this night. But in 1898 *wöwöchimtu* went to dance from time to time in Chief kiva. (Amer. Anthropol., II, p. 112.)

⁴² He is the ancient (*wöye*) of the Coyote clan. From this association these men are also called Red-headed (i.e. bloody) men, Fire, Cedar-wood. But *masöwo* is more than a clan kachina. He lived on First Mesa before the people arrived there, he is Skeleton or Death (*Voth*), and he is undoubtedly to be equated with *masawi* of the Keres, who is the younger of the two war gods, although sometimes appearing as among the Hopi as a single figure.

The day following, November 28, was *ovek'nyiwa*, and a rabbit hunt was in order. It was called out about 10 A.M. by Ting'avi from the roof of his wife's house, a house on the plaza of Sichumovi. Ting'avi is a Rabbit clansman and the hunt chief (*maakmongwi*). He always calls out for the hunts; were he absent his brother would call out.

CALENDARIAL SUMMARY OF *W'owochim*, 1920

- November 18 Smoke assembly.
- November 19 Calling out.
- November 23 Standards up in kivas, i.e., the chiefs go in.
New fire-making, in late afternoon.
- November 24 Early morning dancing by *w'owochimtu*
Members of Horn and Agave societies fetch wood for their kivas, and hunt.
2 Night initiation into Agave society
- November 25 Early morning dancing by *w'owochimtu*
Evening running by Horn and Agave society members
- November 26 Prayer-stick making by Singers, Horn, and Agave societies.
Dancing all day by *w'owochimtu* and an afternoon dance by Singers' society, with vituperation by women society members
Meal collecting by couples from all societies except the *w'owochim*.
Run to Sun-spring by *k'anita*
Feast in kivas
- November 27 All night ceremonial by all except *w'owochimtu*
Early morning, meal trails laid to Sun spring and to shrines of Earth Woman and Masowo, and mesa edges sprinkled with meal by the meal collectors.
Emesis by society members
General head washing.
- November 28 Rabbit hunt

NOTE ON THE PERFORMANCE AT MISHONGNOVI, NOV. 25

We reached Mishongnovi at 2 P.M. It was their *totokya*. Neither at Mishongnovi nor at any other Hopi town was the *w'owochim* ceremony performed⁴³ this year in extended form. I was

⁴³At Oraibi the performance was synchronous with the Walpi performance; at Hotavila it is said to have been a day later

told. As we went up the wagon road we met an Agave society man on his way down. He was kilted, the upper part of his body nude, his right shoulder painted blue, his left shoulder yellow, with parrot feathers in his hair. He carried a basket tray and was apparently bound on a meal collecting tour to the houses

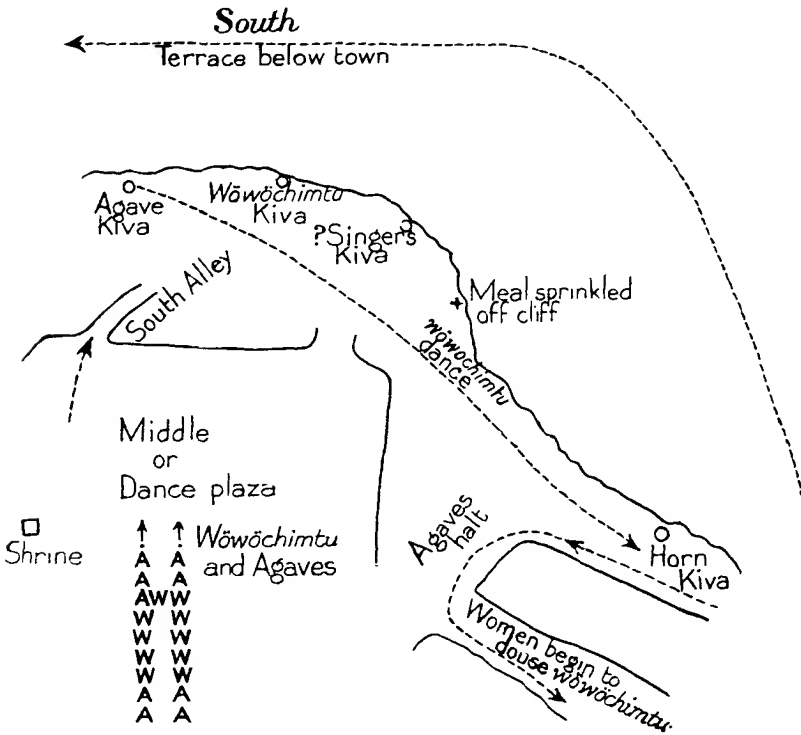


FIG. 41.—Diagram illustrating the Mishongnovi *acochim*.

below. On top, other figures were seen making domiciliary collections, the women bringing out cupfuls of meal to contribute to the basket tray. A group of *wōwōchimtu* and Agave society men were out dancing, as usual in two lines, the drummer in between and the Agave men at the ends—ten Agave men, nine *wōwōchimtu*; evidently at the last initiation at Mishongnovi more boys had been taken in than at the last initiation at Walpi. . . . To make the dance circuit from *wōwōchim* kiva up the western side of the town, past Horn kiva, back and along the road to the Middle

and out the alley to the south and on to *wöwöchim* kiva (see Fig. 41) took about fifteen minutes. There were the same dance step and sidewise movement as at Walpi, and the group's forward progress was similarly broken by short return movements. The dancers held hands with fingers imbricated. The music of the song was the same as that of the Walpi *wöwöchim* song, I was told, but set to different words. . . . As I followed along with a group of children I noticed that the children were very prudent about going in front of the dancers, scampering away with more spirit than mere respect would call for; evidently the taboo of not getting in front of the dancers is not confined to Walpi.

On passing by a kiva hatchway the Agave men sprinkled meal towards it, they also sprinkled the shrine in the Middle; and as the group emerged from the southern alley one or two Agave men went over to the edge of the mesa to sprinkle meal. They laid a trail of meal from kiva to kiva before descending into Agave kiva.

After an interval of about fifteen minutes inside of the kivas, the two groups emerged to repeat the dance circuit; this time there were twelve Agave men to fourteen *wöwöchintu*. The costuming and make up of the *wöwöchintu* were the same as at Walpi except that the face painting came out more plainly—two red lines across eyes, two across mouth and on each cheek two vertical lines—and all the dancers wore shoes or moccasins with heel bands. As at Walpi, the men in the first and last positions in line carried a standard of sparrow hawk feathers. The drummer had his ear of corn tied around his forehead. The cap of the Agaves was of basket work. Across the shoulders they wore a buckskin mantle.

The next and last appearance of the dancers was from 5 to 5:30. Seventeen Agave men emerged from their kiva, to walk in single file to a little distance from Horn kiva and halt there at a corner, waiting. Soon an old man, blanketed, went down into Horn kiva, and then six Horn society men emerged to disappear in single file to the northwest of the mesa. They wore across their shoulders the white blanket with black and red border, and curv-

ing back from their cap was a mountain sheep horn. The file of Agaves now proceeded in the same direction, sprinkling meal toward the hatch of Horn kiva as they passed by. Both groups were next seen at intervals on the terrace below the town going from west to south to disappear on a slow run behind the mesa to the east. At two places the leader of the line stooped to the ground, as if to sprinkle meal.

Meanwhile the *wōwōchimtu* had come out from their kiva, fifteen of them. All were nude but for a breechcloth and their hair was done up in a corn husk poke over the forehead, like the hair of the Singers in their dance at Walpi. The *wōwōchimtu* danced as in the morning, but to another song, and like the Walpi Singers they sang against the women who came out to throw water and to berate. The women talked in the same high pitched voice as at Walpi. One woman jerked at the breechcloth of two or three of the dancers and another woman took a stick to them. The song went on without a break, but the individual singer would bend towards the woman reviling him. In these movements of the body as well as the arm movements I was reminded strongly of the *koyemshi* of Zuñi. The singing with an interval of harangue also reminded one of *koyemshi* song and harangue.

The *wōwōchimtu* had progressed in the usual circuit, dancing at one place (see Fig. 41) when they first came out and then waiting for the other groups to move on before they themselves went up the road to Horn kiva. Their interchanges with the women began on their way into the Middle (see Fig. 41). As they started out of the Middle by the southern alley they encountered the two other sets coming in, so they danced back into the Middle, an unexpected manoeuvre, causing much merriment because for a moment it looked as if they were merely dancing back against their aggressor with the stick. As they danced again in the Middle, first the Horn men passed by them and then the Agave men, both groups singing and shouting and sprinkling each *wōwōchimtu* with meal. The three groups now withdrew into their respective kivas, concluding the performance.

As we left the mesa there were no indications of feasting to follow, as on the corresponding day on First Mesa. My First

Mesa escort had no explanation for this omission,⁴⁴ nor could he explain why there had been no appearance at Mishongnovi of any group of Singers.

COMPARISON WITH THE CEREMONIAL AS OBSERVED
IN 1892, 1893, 1898

They went in to smoke in these three years on November 8, ten days earlier than in 1920.⁴⁵ In 1893 it was about new moon, in 1920 the moon was in the third quarter, a difference bearing out my informant's statement that the phase of the moon in this ceremony is a matter of indifference. . . . There was no appearance in 1920 with the *wõwõchintu* in their final appearance of the dancer with the moisture tablet. . . . In 1920 there was but one group of Singers out to dance, not three groups as in the earlier years. Nor in 1920 were any dressed as women. And again no "moisture tablet" was borne. Dr. Fewkes associates this tablet with *mamsrau* ceremonial, and it is possible that it has ceased to be carried by *wõwõchintu* and the Singers since the lapsing at Walpi of the *mamsrau* ceremony. . . . In 1920 on the concluding day, the day the three meal trails were laid down, there were no dances. In the earlier years this day was the dance climacteric. In the account of the ceremonial in the earlier years there are several occurrences, not only within the kiva, but without, which I did not observe, but that these were not followed in 1920 I would not venture to say, as my opportunities for observation were curtailed by residence, not in Walpi, but in Sichumovi, and by the pursuit of other research at the time, research which in view of the fact that I was not admitted into the kivas to follow the ceremonial systematically seemed more rewarding. . . . Yet despite this reservation one gets the impression that the ceremonial has been cut down—as noted there were no dances in 1920 on the concluding day. I can but think there were fewer night patrols, and, then, a definite and significant fact, the participators in the new fire ritual num-

⁴⁴ See p. 179

⁴⁵ In 1921 on November 10

bered under forty in 1920 as against one hundred in 1898. . . . Two features observed in 1898 and 1920, but not noted in the earlier accounts, were the visit of *kwanila*⁴⁶ to Sun spring and the feast in the kivas. *Kwanila*'s run may well have been overlooked in the early account, or confused with the patrols in general; but the kiva feast is too conspicuous an affair to have been overlooked, *if it occurred*. Possibly it was an accretion after 1893. And perhaps it occurs only on First Mesa, not at Mishongnovi. In describing it in advance, my host likened it to the gifts of food, etc., made to the *koyemshi* (at the close of *koko awia* or *shalako*) at Zuñi. Possibly it is a conscious imitation.

A comparison of the chiefly *personnel* in the earlier years with that of 1920 is of considerable interest to the theory of Hopi chieftaincy.

TABLE 2. CHIEFS OF *Wówochim* SOCIETIES

	1893	1898	1920
Singers	Hani (Tobacco)	Hani (Tobacco)	Hani (Tobacco)
<i>wówochim</i>	Suñoitiwa (<i>chakwena</i> i.e. Mustard)	Suñoitiwa (<i>asa</i> i.e. Mustard)	G'awehtima (Lizard, Snake)
Horn	Tuwasmi (Reed) Winuta (Reed) ⁴⁷	Kotka (Bear) Tuwasmi (Mustard) [?]	Kotka (Bear) Wonita or Winita (Winuta) (Reed)
Agave	Anawita ⁴⁸ (Water- house, <i>patki</i>)	Anawita (<i>patki</i>)	Sakwistiwa (<i>patki</i>)

G'awehtima succeeded Suñoitiwa, known also as Shiunga.⁴⁹ Suñoitiwa had no close connection to succeed him, but there were clansmen.⁵⁰ No Mustard clansman wanted the position, how-

⁴⁶ In 1898 *kwanila* bore a "moisture tablet," in 1920, a sun tablet, nor in 1920 did I observe moisture tablets on the backs of the "meal beggars" (Amer. Anthropol., II, pl. VII).

⁴⁷ Winuta is described by the same authors as Bear chief in "The Walpi Flute Observance," JAF 7 : 267. This is an error. He is child of Bear.

⁴⁸ Mentioned as *patki* chief in "The Walpi Flute Observance," JAF 7 : 267.

⁴⁹ But Lowie, observing in 1916, gives Momói as chief of the *wówochim*.

⁵⁰ The office had belonged to the Squash clan which became extinct. Suñoitiwa had come into the office as child of Squash in accordance with the rule that a ceremony

ever, so Hani, Singers chief, called for a volunteer at large. "Who will take it, and get that field?" he said, meaning a certain field to the southeast that goes with the office, being called *wöwöchim basa* (*wöwöchim* field). G'awehtima volunteered, and the *tiponi* was moved to his house, i.e., his sister's house. It is noticeable that the organization still use the Mustard clan kiva,⁵¹ *wikwalibi*. Sakwistiwa succeeded Anawita, a clansman merely,⁵² Anawita having no brother or nephew to succeed him. Kotka succeeded Mi'le,⁵³ his own maternal uncle. In 1893 Kotka was too young to officiate so that his place was taken by Winuta,⁵⁴ inferably as child of Bear. Now Winuta (Wönita) officiates in his own right as Reed clansman (the ceremony belonging jointly to Reed and Bear clanspeople); unfortunately I do not know the relationship between Tuwasmi and Winuta.

COMPARATIVE DISCUSSION

In concluding their accounts of the ceremonial Stephen and Fewkes observe that they have attempted no interpretation, and that interpretation must wait "until the whole scheme of Tusayan ritual is worked out." The theory of Tusayan ritual is still in abeyance; but some interpretation, based on comparative data assembled during recent years, may be attempted, I think, of the *wöwöchim* ceremonial. . . . On First Mesa, and Voth

may be "handed" to a child of the clan when there is no clansman to hand it to. This is quite in accordance with the Zuñi system, and is more regular among the Hopi, I get the impression, than Dr. Fewkes thinks. (Amer. Anthropol., II, 123, n. 1).

⁵¹ The house adjacent to the north was that of Wukomana, the "oldest mother" of the Mustard clan, and the guardian of their *wöye*, *chakawna* and *panuliwa*. At Wukomana's death the masks were moved to Sichumovi, to a Mustard clan house on the Middle. Wukomana's house is now untenanted, but during the ceremony it was used as a store room, I observed, by the Mustard clan uncle from our household, a *wöwöchimtu*—and also the chief of the *wikwalibi* kiva. If the Mustard clan came from Zuñi to settle at Sichumovi, as has been said, how comes it, let me ask incidentally, that their "oldest" house is at Walpi?

⁵² On a vacancy in office from lack of family successors, the *oldest* man or woman in the clan will assemble it to decide on an incumbent. The right of seniority is observed, but if no older man wants the position, a junior is selected and asked, four times, if he will take the position.

⁵³ A Zuñi term for the corn fetiche

⁵⁴ Amer. Anthropol., II, 83, n. 2

recorded the same fact for Third Mesa, every Hopi boy is expected to join one of the four groups or societies which figure in the ceremonial—Agave, Horn, Singers, *wöwöchim*—and until a boy has joined he may not officiate in the *soyala* or winter solstice ceremonial. The *soyala* is a tribal ceremony since at this time prayer offerings are made for all the living and for the dead. Making these offerings for all his family connection is the conspicuous office of the man who has joined one of the aforesaid four societies. So that in this sense initiation into one of the four societies may be considered a tribal initiation. The societies themselves, however, are organized like other Hopi societies, and are therefore not to be considered tribal organizations. Of this more presently.

A boy joins the society, among the four, to which his "father," the man to whom he has been "given" in childhood, belongs. The family of the boy, specifically his mother, may choose anyone to become the boy's "father"—a blood relative, a connection by marriage, a friend. She chooses according to the individual, choosing "the best man" she knows, a man "with good thoughts." His ceremony, i.e., his society, is to her a matter of indifference. This "father" will also act as the boy's "father" in the whipping rite of the *powamu* ceremony.⁵⁵

It is possible, even after the whipping rite of *powamu*, to change "fathers," the transfer being due to sickness or to trespass. Were a boy⁵⁶ caught looking into the kiva when a ceremony, any ceremony, was on, the boy would have to join the ceremony, the man who first sees him in the act becoming his father. *Kwisna*, "I trap it," this is called, and the boy is called *kwisí*, a term applied to an animal in a trap.⁵⁷ In transfer through sickness⁵⁸

⁵⁵ At Oraibi the ceremonial father may not be a clansman of the initiate or of his father. ("The Oraibi Powamu Ceremony," p. 98.)

⁵⁶ Or man? See JAFI v, 201, n. 2. The four *wöwöchim* societies "display jealous care not to look down into or even step on the roof" of the kiva of another society, except in ceremonial.

⁵⁷ Initiation for trespass is well known at Zuñi, likewise at San Felipe.

⁵⁸ The seven year old boy in my household had been transferred from one "father" to another. As a baby he had been given to a *wöwöchimtu*; then during sickness he was given to a Singer, the husband of his mother's sister.

a boy is given to a man in order to receive new life. The sick boy is thought of as dead and from his "father" he is to receive new life, a "new body." Corn meal is given to the "father" to hold in his mouth while he "eats" (i.e. sucks) from the chest of the patient four times, "spitting the sickness away from him." Then the "father" breathes into the mouth of the patient four times. This cure may be performed for a girl, too. She, too, is given to the curer as his "child" although she is not put into his ceremony. An adult man may have himself transferred from one ceremony to another, i.e., if his curer belongs to a group other than his he joins his curer's group.⁵⁹ I heard of a man called Sikwi who had belonged to the Horn group and through sickness was transferred to the *wöwöchim*⁶⁰ group—"he washed off that Horn ceremony."

In initiation for sickness and for trespass we recognize Zuñi society features; and in the giving of an infant to a man chosen by the mother to become his ceremonial father in an organization into which every youth is initiated, we again recognize Zuñi⁶¹ features: quite similarly a Zuñi boy has his kiva group determined for him, the six kiva groups composing the *kotikyane* or kachina society into which all Zuñi youths are initiated. But at Zuñi the kiva groups continue to be associated with the kiva, not merely for a periodic ceremony but continuously, and the Zuñi kiva groups are distinct from the Zuñi curing societies; they are a part of the kachina cult. Now among the Hopi the four corresponding groups have little or nothing to do with the kachina cult.⁶² Very confusing for purposes of comparison are these similarities and dissimilarities. It is as if you had two identical sets of ceremonial patterns to toss as dice, one set falling into one combination, one set falling into another combination.

⁵⁹ Analogous transfer may be made at Taos, where every boy has to belong to one of six groups

⁶⁰ The chiefs of *wöwöchim* and of Singers were referred to as curers to Lowie. (Personal information from Dr. Lowie)

⁶¹ Also Taos, but here the father rather than the mother selects the ceremonial father.

⁶² And are in this like the kiva groups of Taos, where there is no kachina dancing

There is a minor group of similarities and dissimilarities which is equally perplexing. I have in mind the comparison of *wöwöchimtu*, Singers society, and Horn society with Zuñi *koyemshi*, *ne'wekwe*, and *apilashiwanni* (bow-priests or war society).

The *koyemshi* are usually referred to at Zuñi as the *alashi*, the old ones, and much the same meaning appears to attach to *wöwöchimtu*. . . . Water or urine is or was thrown by the women on the *koyemshi* during the *koko awia* ceremonial, and formerly in a ritual called *dukuyada*, which is derived, I surmise, from the Hopi term *kukuya*, meaning to pour, and applied to the rite in question. . . . *Wöwöchimtu* like *koyemshi* leave their own kiva or meeting place to dance in that of a coöperating group. Although the *koyemshi* are impersonated each year by different sets of men, the masks are in the keeping of one of the paramount priesthoods or rain-societies, the *ashiwanni* of the west, organized like other *ashiwanni* sets along Hopi lines of ceremonial guardianship, i.e., by family connection. Possibly of significance in this connection is the composition of the *tiponi* of the *wöwöchimtu* (and Singers). Unlike the *tiponi* of other ceremonies it consists not only of a completely kernelled ear of corn (*tochmina*), but of a hollow cane which is called the husband (*konyata*) of the corn, the mother (*yüata*, his mother) or grandmother (*suata*). Now the *ettowe* of the Zuñi *ashiwanni* (rain-societies) are hollow canes, in distinction from the corresponding fetiches of the curing societies, the *mi'we* or corn ears. The conjectural etymology of the term *koyemshi* is here also to the point—*koko* (kachina), *oyemashi*, husband. That the *koyemshi* represent a phallic element, the male principle, their ritual and myth abundantly attest. We may note, too, that the incestuous element in their myth of origin is comparable with the obscene ritual relationship between *wöwöchimtu* and *mamsrautu*.⁶³

A mask, *he'he'a*,⁶⁴ is associated in some way with the *wöwöchimtu* (perhaps as masks are associated in Keresan cult with

⁶³ Another comparison, with Jemez, is suggested by the relation of the *wöwöchimtu* and Singers society to the women's societies. There is a ritual relation at Jemez between the two phallic clown societies and the two women's societies.

⁶⁴ Cf. Amer. Anthropol., II, 125, 129. This kachina is associated at Laguna with the *koshare*, at Jemez, with the *tabó'sh*, both clown societies.

the societies, i.e., in initiation), but the conspicuous use of the ten *koyemshi* masks, as well as the important rôles of the *koyemshi* in the *koko* or kachina cult and as fun makers, are traits which strikingly differentiate the *koyemshi* from the *wöwöchimtu*.

As to parallels between the Singers society and Zuñi *ne'wekwe*,⁶⁵ they, too, exist, but in the same perplexing way. The chief supernatural personage of the *ne'wekwe* is *bitsitsi*, so called onomapoetically from the rabbit whistle he uses. His face is painted, with horizontal stripes somewhat suggestive of the Singers facial painting. The hair of *bitsitsi* as that of *ne'wekwe* in general is done up like that of the Singers in a poke over the forehead, with corn husk. *Bitsitsi* is associated with a woman's ceremonial, the *molawia*, in which girls run a race, a suggestively Hopi trait. That the race manager is said to belong to the Tobacco clan may be an insignificant fact; but that clanship figures unusually prominently in the *molawia* (Mustard clan also) and in the *ne'wekwe* organization is significant for Hopi parallelism.

The functions of leadership and guardianship of the Horn society members, the *alosaka*, in connection with the other groups are the same as that of the bow-priests of Zuñi; but the bow-priests are, or were, organized distinctively as a war cult, only those who had taken a scalp being eligible to membership.

As for the Agave society, there is a Zuñi homologue, as far as name goes, in the *k'oshikwe* or Cactus society, a war society; and among the Zuñi *koko* or kachina, *shulawitsi*, the fire maker, with his fire drill and his yucca, is comparable with the Agave fire maker (both *shulawitsi* and the Agave men are besides affiliated with the Sun) but there homology or analogy, as far as I know, ceases.⁶⁶

⁶⁵ Between Singers and Navaho ceremonial there are also suggestive resemblances. The Singers may be thought of in Navaho terms as the chanters of the ceremonial. The Rabbit-Tobacco clan is found among the Navaho nearest to First Mesa; in fact it is said that Navaho Rabbit clanswomen married into First Mesa. The phallic symbol—painted in red on the body of the Singer—is found on the body of the younger War god of the Navaho. (Cf. Matthews, "Navaho Legends," pl. IV, and p. 253. Mem. Amer. Folk-Lore Society, V (1897). By the Navaho the symbol was interpreted as a bow.

⁶⁶ The Hopi kachina to be equated with *shulawitsi* are the *abaich hoyu*, who may be supposed to take the part of the little war gods in the *niman* ceremony, i.e., one in

The Agave society seem to be somewhat apart from the three other groups. The other groups initiate together, with the Singers in charge; the Agave society initiates on its own.⁶⁷ Their cowbells appear to point to Spanish influence. Moreover the Catholic church bells of Oraibi are in the keeping of the young man who would be the Agave society chief, were the organization in Oraibi still active.⁶⁸ In Hopi tradition the Agave society ceremony is the only one of the four which was not introduced from Awatobi, by Tapulu, that irate Town chief who summoned the people of Oraibi and Walpi to destroy his sinful town and who, after the destruction, preserved the altars of several ceremonies to establish them at Walpi.

The rite of making the fire, both at Zuñi and among the Hopi, is a rite of omen (Zuñi, *teluuna*; Hopi, *naddwan'tota*; Tewa, *tipixpingangang*). If it is made quickly, the year will be good, if slowly, bad. At Zuñi the Big-firebrand society, a Warrior society, have four songs to sing and, if necessary, to repeat during the fire-making, which is also, I surmise, the time tally for the Hopi rite.⁶⁹ At Zuñi two groups also engage in the rite, here

the lead, the other in the van. *Shulaw'tsi* and *abauch hoyu* are corn as well as fire kachina. Their spots represent corn. We may note the rain symbols on the gourd cap of the Agave society.

⁶⁷ Before their initiatory rites the Agave society closes the mesa trails. Any trespasser, human, horse, or donkey, would be killed (Cf. JAFI, v, 201, no. 1), if an Agave man reached him before a member of the other groups. If a *wowochimtu*, Singer or Horn man, reached the trespasser first, a Horn man would mark him with white (*toma*) and he would be safe. The Agave society build fires, four or five fires, in the Middle and at daylight bring out their "children" (initiates) (Cf. JAFI, v, 215-217.) People from Sichumovi and Tewa "who want to see the fires must spend the night in Walpi," i.e., before the trails to Walpi have been closed. Incidentally I may add that the other groups have brought out their initiates the preceding afternoon. (Cf. JAFI, v, 213-4.) The initiates are dressed as women. They dance the Butterfly dance which is the *tablita* or Catholic fiesta dance of the Eastern towns.

This detail also should be noted. At the winter solstice ceremony after initiation the ceremonial father of an Agave society initiate makes for "his child" a crook prayer-stick which the "child" keeps for life.

⁶⁸ Cf. the suggestions of Christianity in connection with the Agave society noted in "The Tusayan New Fire Ceremony," p. 445.

⁶⁹ Although there is contradictory evidence Fewkes writes that "almost simultaneously with the beginning of the song the fire makers began to rotate their drills" (Amer. Anthrop., II, 93), on the other hand Stephen writes that after the societies had sung about ten minutes "amidst perfect silence the fire makers began rotating their

during the last night of the winter solstice ceremony, the Big-firebrand society, and—as associated with the rain societies—the impersonator of the kachina *shulawitsi*, already compared with the Agave fire-maker. Obviously enough both the Zuñi and Hopi new fire-making is or was war ritual. In fact the offering of prayer feathers in the flames by the Hopi chiefs is called “Masauwuh, that which is his all the chiefs placed.”⁷⁰

In conclusion what of a more extensive comparison of this part of Western ceremonial organization with organization in the Eastern pueblos? Comparison in my mind runs along the line of war organization,⁷¹ and as a piece of fairly speculative reconstruction. The clown societies, I suggest, were sometime war groups, their clown features such as talking backwards,⁷² burlesque, and license, including sex license, being traits remi-

spindles (JAFL, v, 195). Stephen does state that pollen must be used for friction instead of sand, that horse dung or rotten wood used in other circumstances for tinder may not be used, nor may the fire-makers' helper assist the ignition with his breath, all conditions which do not prove, but do suggest, that omen seeking is involved.

⁷⁰ JAFL, v, 196. Prayer-feathers are offered to Fire in the *oaqol* ceremony (Voth, H. R. “The Oraibi Oaqol Ceremony,” p. 14, Field Columbian Mus. Pub. 84., Anthropol. Ser., VI, no. 1, 1903) and in other ceremonies. At Oraibi fire is associated with the Agave clan. At a new year ceremony (*not wowochim*) new fire is made in the Agave kiva by the Agave clan. New fire is also made in Horn society ceremonies (Ib., p. 21, n. 1.) Obviously new fire making and prayer-feather offerings to Fire are rites which may be fitted into various ceremonials.

The latest references of Dr. Fewkes to the *wowochim* ceremony (“Fire Worship of the Hopi Indians,” Smithsonian Report for 1920, pp. 589-610) as centered about the new fire rite I can but think misleading. Nor do I find in the early accounts or in my own notes any reference to the extinguishing of house fires at the time of the kiva rite.

⁷¹ In the Hopi groups besides the warrior traits already mentioned we should note the use of war bird feathers, e.g., the red shafted woodpecker or flicker by the Singers, and the sparrow hawk, by the *wowochimtu*, and not insignificant is the fact that Hopi initiates are called *kele*, sparrow-hawk, a bird particularly associated with the *kurona* of the Keres and the *ts'unta tabo'sh* of Jemez, the winter clown society. Notable too is the painting by the Hopi societies of short vertical parallels on face, etc., war god marks. For example, the initiates into Singers society have “two black finger-marks (down each cheek)” (JAFL, v, 198). This with their hair feather of wood pecker (Ib., 197) is pretty good evidence of their military character.

⁷² Noted at Zuñi (*ne'wekwe*) and at Jemez (*ts'unta tabo'sh*). The extinct Squash clan of First Mesa to whom the *wowochim* ceremony formerly belonged was also called Sorrow-making (American Anthropologist, II, 124-5), a reference, I take it, to the je-tting, backward talking feature of their ceremony.

niscent of the Plains tribes' military societies. The reproduction or phallic character of the clown societies may indicate a substitution, by way of the existent conceptualism of sex license, of agricultural for military associations. This phallic character is more marked at Zuñi and among the Keres where it is connected with seasonal moiety ceremonialism than among the Hopi or at Taos, where the moiety organization has different associations, and where the clown groups retain more war features. At Jemez there is, as might be expected, a cross of the two general characters. With the Keresan double kiva system, the Keresan phallic-seasonal character attaches to the Jemez clown societies. On the other hand all or most of the Jemez men are taken into one clown society or another, suggestive of the general initiation into one of four or of six groups of the Hopi and northern Tanoans, and suggestive, of course, of military organization.

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NOTES ON TWO PUEBLO FEASTS

BY ESTHER S. GOLDFRANK

ST. JOSEPH'S DAY AT THE PUEBLO OF LAGUNA, NEW MEXICO

AS SOON as we reached Laguna we heard of this feast which was to be on the 19th of September, 1921. Besides honoring the saint, it was a harvest feast. We were told that St. Joseph's Day had been changed from March 19th to September 19th because there were so many good things to eat then.

Everyone in the village was expecting guests from Pohnuati, Casa Blanca, Parajo, Isleta and all the neighboring Mexican towns. Navahos, never very welcome, also came to town then and traded their blankets and silver for corn and chili.

The days before the feast were spent in house-cleaning by the women. Inside, the walls were whitewashed, and the floors thoroughly swept. Outside, the houses were plastered anew and the roofs cleaned. Besides this, bread was baked in great quantities, sometimes as many as thirty to forty loaves, and the men brought in lambs and cattle to be slaughtered. For four nights before the feast the men met in one of the houses near the plaza, belonging to the oldest maternal family of the Corn clan. Here they practised the songs and dances for the feast day.

Two days before the feast the Mexicans came into the village and set up a carrousel, to the delight of both the children and grown-ups. By the 18th there were any number of stands selling ice cream, melons, cold drinks, stands with dolls to be knocked down by throwing a ball, and a large tent that served as a dance hall— in fact a small country fair.

Wagons kept coming into town loaded down with whole families, the wagons from neighboring pueblos uncovered, those of the Navahos prairie schooners. Many came on horseback, and horses and dogs followed in the wake of most of the wagons.

Before seven o'clock in the morning on the 19th the Comanche dancers assembled on the west side of the river and a little after seven they came riding slowly into town. Ahead strode their

leader in a brilliant red suit carrying an American flag. He was followed by five others riding abreast, clothed in black suits with white fringes, and all, including the leader, wore gaudy head-dresses with a crest of black-tipped eagle feathers. Their faces were painted red. Behind the riders were three drummers, abreast, each carrying a double-headed drum about a foot high. They wore no headdresses but hats. The cavalcade was accompanied by a clown who rode a small black jenny and wore a black mask with white whiskers and a fur wig. He was a take-off on the Mexicans. He made his animal buck and perform capers around the cavalcade. Slowly they rode up to the village where they retired to their house.

At 9:30 the church bell rang. The merry-go-round stopped, the fair grounds were gradually deserted, and mass began. In front of the altar stood the priest in a golden stola, near him the Franciscan and choir boy. At the sides stood the two sextana, both Indians, and the one the greatest shaman of the village. The church was packed with Indians and Mexicans, all decked out in their newest and best. For days everyone in Laguna had been sewing on new dresses and blouses. They had bought new overalls and shirts for the little boys, shoes and stockings, and, for the women, shawls and large silk handkerchiefs worn tied around the neck and hanging down the back. All were laden with bead necklaces, rings, bracelets, and earrings. The Navahos alone did not enter the church.

After the sermon, delivered in Spanish, the Indian sextana removed the figure of St. Joseph from its niche and gave it to one of the women near by. The stand was carried by another woman and still another carried a crude wooden figurine of Jesus. In front the chief shaman of the village paraded, ringing a silver bell, and a tall candlestick was held by the other sextana. The priest and Franciscan followed the shrine. Behind came the entire village and their guests.

The procession made its way around the south side of the village and entered the plaza by the east passage. In the middle of the north side a house had been built of poles, covered on the outside with cornstalks and lined with very beautiful Navaho

blankets. A table was placed at the rear and on the sides were wooden benches. The front of the bower was left open and on either side of the entrance was a poplar tree. To this house came the procession. The candlestick was planted in front and St. Joseph was deposited on the table and flanked by four lighted candles. The governor made a speech of welcome to all the people, and they were advised to put away their firearms. The teniente, war captain and fiscal also added a few words. No sooner had they finished than the beating of the drums and the songs of the Comanche were heard. The two clowns came in advance, dressed in khaki trousers, leggings, and dark shirts. They wore black masks outlined in white and with a white cross on the forehead, the vertical line forming the back of the nose, from the tip of which hung a black tab. The lower part of the mask was fastened to the neck with a white handkerchief and the masks were topped with tufts of sheepskin. One clown carried a whip which he flourished with great abandon while the other had a lariat over his shoulder. He lassoed those who stood too close to the dancers. Immediately behind them came three more dancers, two wearing suits of American flags and headdresses of eagle feathers as described before. One carried a shield in one hand and a wooden spear in the other; the other carried an axe. Bells were attached to their knees and waist. The center dancer, a man, was dressed like a Pueblo woman with buckskin leggings and black manta, but wearing a large cerise blanket and hair done in Plains style, a braid hanging over each shoulder. The head band was green and had two eagle feathers standing up behind. The dancer carried in each hand a wand topped with two eagle feathers. Behind came the four drummers. They also entered by the east passage. As they entered the plaza, the dancers commenced to dance and moved slowly towards the middle of the plaza in front of the bower. The four drummers formed a circle singing and beating time for the dancers.

The dance was made up of several parts, the woman always dancing between the two men. The clowns¹ fooled with each

¹ *te'apiyu*: Mothers tell their children that if they do not obey, clowns will take them away to a place in the South, Baos, from which they have come, and that they will be treated badly there.

other and the dancers, imitating their steps and trying to trip them with the lasso. The drummers finally formed a line again behind the dancers, dancing a few steps in this formation and then grouping themselves into a circle again. Before starting the dancers walked around until they were facing in the direction in which they were to start dancing. Again the drums fell into line behind the dancers and, led by the clowns, who cleared the way, they left the plaza by the west door. It was then noon and all went to their homes where their guests joined them for the midday meal.

In the afternoon the Darawee came first, a dance led by a group of older men in block formation, singing in time to a single drum.² They gestured with their hands, illustrating passages of the song, and beat time with their feet. They were a sort of chorus for the men and women who followed in pairs, first two men and then two women. These did not sing, but simply danced.

Any costume seemed to do for the men. Some wore dark trousers and vests, others wore a short white skirt with embroidered pieces down the sides and a fox skin hanging from the belt at the back. The shirts were either plain or embroidered. Around the knees were strings and bells. A silk handkerchief was worn around the head and the hair of some was wrapped at the end in a red braid. Their hands had been painted white and designs were streaked in and their faces were marked with red and white paint. In the right hand each carried a gourd rattle painted red or green, in the left a tassel of corn.

The women were dressed in Pueblo costume, bedecked with beads and with a brightly colored silk handkerchief hanging down the back. They held a corn husk in each hand and their step was more subdued than that of the men. Their hair was doubled up and tied with red braid also.

Men and women danced in double rows down the plaza and then, returning, turned to the left and danced between the pairs that were following. Whenever the figure changed, the men gave a long rattle. The lines formed east and west with a leader at

² Dr. Franz Boas has noted the meaning of these gestures and has very kindly permitted me to append them; see pp. 193-195.

each end holding a crooked cane. The women stood in place moving their hands up and down as in the previous figure and each man danced around the woman at his right. As he completed his circle, the woman turned too. Then the whole group moved around in ellipse formation.

While this dance was being given, women with baskets of bread, corn, and fruit entered the plaza and threw the loaves and ears at the chorus. Some was deposited in the corn house for the saint, but the dancers themselves were in no way interrupted.

As the Comanche dancers entered—those who had ridden into the village in the early morning—the men and women of the Darawee dance filed out, followed by the men of the chorus. The new Comanche dancers were led by the same clowns, who had accompanied the morning dance, the one with the whip having exchanged it for a lariat. Following them came the captain in a red suit and seven dancers in black suits as described previously. Behind marched seven drummers. Again the drummers formed a separate circle and the dancers went through various formations as in the former Comanche dance. After they finished there was a short intermission.

Then again the Darawee dance was gone through, followed by the Comanche dance of the morning. After this the second group of Comanche dancers, accompanied this time by the Mexican clown of the early morning procession, appeared. Then came the final Darawee dance. When their dance was practically completed the Comanche warriors in black returned to the plaza, accompanied now by the dancer impersonating the Pueblo woman. The Darawee and the Comanche, with this slight innovation, were danced simultaneously until the end of the festival.

Between the dances, the dancers approached the bower and stood in front of the shrine of St. Joseph. When the dances were over, the governor made another speech, his assistants added a few words, and then the sextana and some of the women picked up the candles and the figures of the saints and marched back to the church accompanied by a few devoted followers.

I am indebted to Dr. Franz Boas for the following translations of texts noted by him directly after the Fiesta at Laguna.

SPEECHES ON ST. JOSEPH'S DAY AT LAGUNA, NEW MEXICO

The Governor Speaks

The governor said in the church yesterday morning: "Enough, people. Today I shall relate to you for a while what I have to say." Thus he said. "Today we come here again to the feast of San José, thus is his name. It is good thus, that we see one another again in good health up here in Laguna. It is good today that we remember again the old ways for his (San José's) sake. You have come here from all around. Therefore it is nice that we see one another today. Now go ahead. Let us be happy. You will take San José; all those who are honest will carry him and you will pray to him, where his father God is above in heaven. Indeed he is his father. Long ago he did everything that (God) wanted him to do. He took the name of God and Mary's child here in this world where he was born. Therefore this feast will be celebrated. On the 19th of this month it will be celebrated. Therefore we shall be happy and those who are honest will carry him, and you will pray afterwards. You will ask for good health and that the stock will be well and that our property will be plentiful and that we shall have a good winter and that the new year shall be good again in the future. Thus I want you to do, my people, all of you who are Catholic and Christian. Thus you will do my people. Now go ahead and prepare yourselves. Carry out San José and God's child. Now my people be good. You will carry them. Thus I advise you."

The Teniente Speaks

Then on his part the one next to the governor (the teniente) spoke. "That is the way indeed. You will do so, my people, as the governor has already told you. That is as much as I said to you my people. Go ahead and get ready and carry out San José. Thus it is. Go ahead."

The War Captain Speaks

Next the war captain spoke. "Indeed, that is how you will act, my people, as already spoke to you first my chief, the governor, and the teniente. That much I shall say. Now go ahead."

The Fiscal Speaks

Then in his turn the fiscal spoke. "That is the way you will do, my people indeed honest! He was the only one who long ago, as is said, obeyed God's child. Therefore the great festival is made in this manner and it will be made in this world as long as people live; they will make this festival on the 19th of this month when the corn ripens. Thus far I shall speak, my people. Now go ahead, take him out and be happy! You will carry him." Thus said the fiscal.

THE DANCE SONGS

I (first sung September 19, 1921)

From up north at *cip'ap'* we came out. I, Chief Broken-Prayer-Stick, and my people went.

ay a ha · maye wi a hi' a ay a wi na · yi,

thus he said.

Chorus

They went to the middle south from the northwest ahead southward. They were racing Broken-Prayer-Stick and my people when they came out and went there and here still they lived.

ha · 'ya haia' ha · 'ya haia'
ay a' wia ε y ε ha' wi n a
aye ε' win a y ε wi y a y ε'

II (a hunter's song)

Whither, young man, are you going? Here from the south to my hunting ground I walk. Thus I say.

a · ' nom a a h v · n a' ai' n a · e' a · haa i y a' ε' ay aa'
wi' a y ε wi' a hi y a a · y a win a · ' y a, thus I say, a · ' no · m a.

Chorus

(y a · n a a i h y a')

I also a youth, I shall catch deer game. I shall be happy. I shall sing

O · ' m a e · l s' hai' a wi y a ya hoi aya aya wim a · y a a · a a ·
h a · ai a ha ha 'hua hai' a a h a haa ha haa hai aa-i aa-i
ha haa hai yi yi, hi yi, hi yi hi yi hi.

Do you behold, I sing—I also being a youth?

hai a wi y a hai a yi aa hai a haa i hi yi he · lo ai yi
ai yi wi ye a e · lo yas wia wi y a y ε' hoon y a win a ai y ε wi
y a y ε'.

SIGNS USED IN SONGS

Rain: Flat hands raised palms down and moved down with trembling motion.

Clouds rising: Hands half-opened raised, fingers up.

Plants on field grow: Hands alternately moved up; first finger raised others slightly bent.

He sings, he says: First finger of right hand moved forward, palm down.

Clouds come up from four points of the compass: Pointing up with first finger from four directions.

Soon: Hands palms down, brought together from both sides quickly, arms bent, hands in front of upper part of chest.

Song

Over the whole field: Flat hands palms down moved slowly together back and forth from right to left, hands not far apart, arms bent.

There is rain: Shaking down the hands in the same position.

Then he says: Flat hands held vertically raised to the height of the head and moved alternately a little forward

Everything will grow: Both hands held vertically half closed, moved together from a distance and then up.

I was happy and danced: Elbows at the sides. closed fists half upward, moved in rocking motion.

To hit with clubs: Motion of throwing a club with one hand.

Song

I went: Pointing to north.

All over the country: First finger pointing out and moved to and fro from right to left over long arc.

Looking for something: Two first fingers jerked forward from face.

Then: Fist in front of lower part of face, upper half circle from right to left.

I see: Two first fingers pushed forward in front of face.

A deer: First and second fingers of each hand up on each side of head, backs of the hands outward.

I went quickly: Shoulders drawn up, bent elbows held stiffly, slightly rocking motion of arms.

And shot: Motion of throwing a stick with one hand.

NOTES ON THE FEAST AT POHUATI FOR ST. ELIZABETH

This took place on September 25, 1921. The Darawee was the only dance given at Pohuati and was very like that given at Laguna the previous week. First the drummer entered, then the chorus of older men, then the men dancers, followed by the women dancers, each in a separate group. They then danced in pairs as described in the note on Laguna. Although the dance was essentially the same there were a few variations, both in formations and rhythms. The time changed more often; some beats were decidedly slower and the emphasis was placed differently. New figures were introduced into the dance. In one the line divided and each line followed its own leader, moving in an elliptical formation from left to right. During this figure the women, who carried branches of cottonwood, held the one in the right hand down while they moved the one in the left hand rhythmically up and down. In another figure the men stepped in front of the women, forming four lines. The leaders moved to the middle of the group and the whole block moved a few steps forward, the leaders dancing backward. They then turned and moved in the opposite direction, the leaders stepping through the rows, so that the formation would be the same only moving in the opposite direction. The men then returned to their original places, again making two rows of dancers, the leaders at the end. This same

figure was introduced later, varied by turning in all directions, but only moving when they faced the corn house where the saint was, or turned away from it. Throughout the dance the women did a low shuffle, while the men made vigorous movements, bending the knee.

The dress of the dancers was quite informal. Only one man wore the white skirt and fox-skin costume. The rest for the most part wore the clothes of every day life. The hands of the women were not painted and streaked as at Laguna. Both men and women dancers carried cottonwood branches. The men carried rattles in one hand as at Laguna, some more elaborately decorated.

NEW YORK CITY

NOTES ON THE INDIANS OF SOUTHERN MASSACHUSETTS

By HARRIS HAWTHORNE WILDER

I

INTERMENT AMONG THE POCUMTUCKS AND RELATED TRIBES

IN JULY 1917 my associate, Mr. Ralph Wheaton Whipple, and I published some data concerning the position of several local aboriginal skeletons, and described a technique by means of which the exact position in the soil held by each bone could be permanently retained.¹ With a skeleton thus prepared not only have we a much more satisfactory specimen for museum exhibition, but we have the data from which we may deduce the exact play of forces which have brought the parts into their present condition, and are able to make some fairly probable surmises concerning the post-mortem treatment of the body previous to the final interment.

This line of study, that of the movements and the final fate of the parts of a decaying body, includes more than surmises concerning the mortuary customs of the tribe in question; it involves also the subsequent action of burrowing animals, the growth of roots, the effect of such inanimate forces as rain and frost, and the influence of gravitation upon the various parts and in the various conditions. It has a direct bearing upon palaeontology, and seeks to explain many of the phenomena observed in fossil remains. It is well-known that "fossil" material includes, not only the impressions of living and fresh organic material, such as foot-prints, or impressions of surface scales, but, more especially, the impressions of bodies in all the phases of decay, and in all the varied positions assumed by such decaying bodies, and in interpreting such impressions the knowledge of the possibilities is vital. Moodie, in speaking of the shoulder-girdle of Stego-

¹ Am. Anthropol. (N. S.), vol. 19, pp. 372-387.

cephali, a wholly extinct group of Amphibians, says that "after death and before fossilization the girdle was always moved by post-mortem shifting, so that its exact relation to the ribs and vertebral column is still in doubt."² He then refers to Credner's restoration of the pectoral girdle of certain forms, where he places the girdle close behind the head, a relationship which Moodie very much doubts.

There is thus great need of studying the various conditions to which dead bodies are subjected, the forces which tend to displace the parts, and the responses of the parts to these conditions; it constitutes a new branch of science, which may for convenience be called *necrodynamics* or *necrokinetics*, the power, or better the movements, shown by dead bodies, human or otherwise.

As material for this study, in the very restricted application to the past and present condition of local aborigines, I have now three separate specimens, two of those already written up and figured in the paper of 1917, and a third, the best of the lot, recently excavated at Greenfield, Mass., in a Pocumtuck cemetery.

The first appeal that presents itself, when viewing such a skeleton, is that of the result of the first decay, the "slump" of the softened body under the influence of gravitation. These early post-mortem changes are vividly presented in an old man from North Hadley, Mass. which has been prepared in place, without the displacement of a single bone. This skeleton, thus prepared, has been photographed and the photograph given in the *American Anthropologist* (July-Sept., 1917) as Fig. 56. This the reader may consult in connection with the description that follows. From a drawing of this same skeleton, traced in full size on a plate of glass, the reconstruction presented here was made, attempting to show the body, at the time of interment (Fig. 42). When originally placed in the ground this body must have been rolled very slightly beyond an exact lateral position, tending to be rolled over on the back, so that the vertebral column, when loosened by decay from its adjacent bones, especially the set of ribs of the right side, rolled over further in

² Moodie, Roy L.: *Coal-Measure Amphibia of North America*, p. 29.

the same direction, and brought the lumbar region quite "on its back," eventually causing the lumbar vertebrae to lie with their ventral aspect facing straight upwards. The ribs of the right side, pressed into the earth, and supported by it, have not



FIG. 42.—Reconstruction of the body of the old Nonotuck Indian from North Hadley, based upon the skeleton. This latter has never been removed from the original earth, but both the earth and the bones have been hardened by soaking in shellac and water-glass, and thus represent the exact position when found. The bones were drawn on a glass plate, placed horizontally over the skeleton, and the figure was drawn from this.

moved at all, but are still placed with their heads in perfect line, and with the thoracic vertebrae broken away from them. The ribs of the left side, on the other hand, have dropped down through the cavity of the thorax, which must have existed for

some time, and lie like a pile of similarly shaped curved knives, their surfaces in contact. Eventually the pressure of the earth, and the action of the rains, gradually obliterated the chest cavity entirely and pressed the "pile of knives" down across the vertebral column, or dorsal to it, another indication of the original position of the chest, with a slight dorsal roll, that became emphasized as it settled.

The effect of the rolling, clearly noticeable in the vertebral column, was continued in the pelvic region, showing definitely that the lumbar vertebrae and sacrum were still strongly attached at the time when the thorax dropped down, and the upper set of ribs fell. The transmission of this roll brought the sacrum also over on its back, so to speak, and took the ossa innominata with it. At the same time there must have been a pull of the proximal ends of the legs, so that, instead of being dislocated by this strain, the heads of the two femora followed the acetabula, and when eventually the femora settled, their heads remained almost in their original places relative to the acetabula. The breaking apart of the two innominata at the symphysis came late, and was probably the last of the major changes in this region. It was undoubtedly the direct result of the weight of the left thigh, after the drawing over of this part, and only after the decay had progressed far enough to let the leg free. This weight brought the left innominate down by pressing upon its ventral portion, and caused a slight further rotation of the bone.

In the thoracic region the sternum, when no longer held by the costal cartilages, dropped directly downward, keeping beneath the left humerus, which lay over it. It fell upon the right set of ribs, and lies now resting upon its ventral surface, the dorsal (internal) surface straight up.

In settling down, the right shoulder (underneath) came to lie higher up, that is, more anteriorly, and a little more ventrally, corresponding to the assumed interment position of the body. The acromial end of the right clavicle still lies close to the corresponding acromion, but the sternal end, being originally at the bottom, next to the ground, is still close to the manubrium. The left (upper) clavicle is dislocated at its sternal end, although the acromial end still bears the natural relation to its acromion.

The considerable dislocation of this clavicle, together with a similar, and even greater, scattering of the cervical and first thoracic vertebrae, forcibly suggests the action of a tight bandage, used in binding up the body to get it into this much folded up position, and made of such material that its restraining influence held after the parts which it confined were separated through decay. Such material could easily have been found by the use of a tanned leathern strap, and the location which would best have produced this result, and one which would at the same time be the most likely, was to place this strap under both knees and over the shoulders, using considerable force in folding the corpse and tying it in that position. This brings one naturally to the suggestion that such a binding of a body was to secure it from the possible use of it by evil spirits, who would be quick to take possession of a free corpse, and come back to torment the friends of the deceased. Such treatment has been frequently reported among peoples of the present day of about the same grade of culture as our local aborigines, and certainly accounts for the disarrangement of these regions in a skeleton otherwise almost undisturbed. (See the article of 1917, above quoted.)

Two further regions show conditions of significance, the feet and the jaw. The first is a negative detail, namely, the perfect state of every one of the bones of both feet, even to the last of the phalanges, of which not one is missing, or even out of place. The feet still lie, the left somewhat above the right, with only a slight displacement at the ankles, due to falling down into a more flat position. This is especially to be marvelled at, since phalanges, both of feet and hands, are very likely to be, not only displaced, but absolutely missing, even in cases where the excavation has taken place under the best conditions in the laboratory.

The actual condition in which the feet were originally placed can never be known, yet the thought comes involuntarily that a pair of strong, well-made moccasins would keep the parts of the toes and the two feet together until the bones had fallen as far as they would, and would quite outlast any of the integument or other parts of the body. This supposition gains further credence from the fact that the finger bones of this same specimen

are in nowhere near so complete a condition, but many are absolutely lost, while others are badly disarranged. In the young woman's skeleton, studied below, the proximal bones of the feet were mostly complete and undisturbed, but the toes,

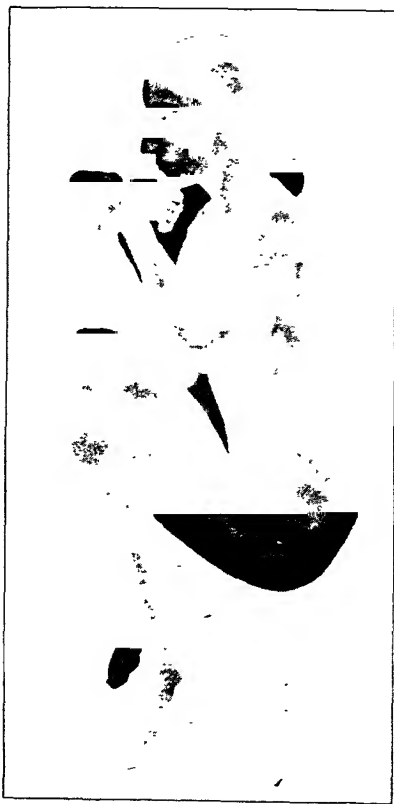


FIG. 43.—Reconstruction of the body of the young Pocumtuck woman, drawn from the bones as still lying in the original earth, and treated in the same way as the old man in Fig. 42.

in one foot including the metatarsals, were absolutely wanting, although the excavation was conducted in the laboratory, under perfect conditions, and the earth was carefully removed, almost a grain at a time. Assuming this elderly man of tall stature to have been one of some importance in the tribe, there is nothing improbable in the supposition of the use of moccasins in the preparation of the corpse.

The other matter, that of the jaw, consists, first, in the dropping off of the jaw from the skull on the left side, making a gap of about an inch, and evidently due to the considerable weight of the unusually heavy chin, and secondly, the complete absence of the whole set of lower molars on the left side. Taken in connection with the existence of the corresponding

upper teeth above this gap, and the fact that these latter show nothing of the customary attrition to be expected in aboriginal teeth, but are provided with excellent cusps as in youth, leads to the guess that the three missing teeth must have been lost early in life, through some sudden injury, and that the upper ones have been spared

the action of their antagonists, a touch suggestive of the strenuous life of early times in North Hadley.

The second skeleton which is available to me for the study of necrokinetics, or the movement of the bones subsequent to interment, is that of a young woman of the Pocumtuck tribe (Fig. 43) centered about Deerfield, Mass., and exterminated by their neighbors, the Mohawks, in 1664. She came from a cemetery out of which some twenty skeletons have already been excavated, of all ages and both sexes, placed in the flexed position, and in fairly definite rows, indicative of times of peace. The discovery of a male skeleton buried in a coffin (the coffin nails were preserved), and lying straight on his back, with the hands crossed, proved the use of this cemetery during the colonial contact period, but the position of the bones, not more than 15 to 20 inches below the surface, and the location in the midst of an Indian cemetery, proved its Indian provenance with little doubt. The discovery of this body with its implied date, and the known date of the extermination of the tribe, fix the cemetery, and that of the skeleton here considered, as of the early seventeenth century.

The skeleton, which we found on Oct. 27, 1917, was in the typical flexed position, lying on the right side and with the face to the east. This places the axis of the head and body north and south, with the head at the south end of this line; the usual position of Indian skeletons in this region, and universal, so far as our experience goes, in this cemetery. She was placed originally exactly upon the side, and the bones of the upper side have fallen in place, with no rotation of the vertebral column or the pelvic bones, as has been described in the case of the old man. The bodies of the thoracic and lumbar vertebrae still face inwards that is, ventrally, as in the natural body.

The legs, as with the others in this cemetery, were not flexed as extremely as in the case of the old man, which suggested post-mortem binding, but seem to have been left more nearly free. The femur of the upper (left) leg was folded only a few degrees beyond a position perpendicular to the body, but the lower one (right) was folded up considerably more, probably in contact with the folded arms. These latter were flexed in a

natural position, but with the hands crossing each other at the wrists, so that the hand of the lower arm (right) covered the other. There was, however, no suggestion of a careful crossing of the hands, or of an interlacing of the fingers, not even of one hand held in the other; the whole picture was that of a flexing of the arms with some precision, while the hands were allowed to fall as they would. The smaller bones of the fingers, and those of the two carpi, were entirely disassociated, and none were found in their natural location relative to one another except the metacarpals, naturally the largest bones considered here. Quite superficial, originally covering the entire region, were the metacarpals of the right hand, except that of the thumb, the distal ends directed towards the vertebral column. These suggested the exact original position of the right hand, bent at the wrist, and laid over the left one. Six of the right carpal bones were in the general position expected, but spread over several inches, and no two close together. Distal to the metacarpals were five or six phalanges, two of them, perhaps those of the fourth finger, still nearly together, and rolled over sideways. Directly beneath these bones of the right hand were many of those of the left, notably the fourth and fifth metacarpals. The metacarpal of a thumb, directly underneath the four metacarpals of the right hand, proved to belong to the left hand. The distal end of this was pointed directly outwards, opposite to the metacarpals that covered it. The left trapezium lay superficially among those of the right, but the rest are probably deeper, and have not been found. One phalanx, quite detached from the rest, lies an inch above the top of the skull, and the right os magnum lies out by itself, beyond the others.

The general impression, as is seen in other cases, is that the small bones of the hand, phalanges and carpals, wander about and are very apt to get lost entirely, but that the metacarpals are more reliable, yet not beyond some possibility of migration. I once found an entire middle finger, metacarpal and all, within the cranial cavity of a skeleton from North Hadley, and yet have never felt the necessity of basing upon it an indication of a strange post-mortem ritual. The lack of toe bones beyond the

first phalanges has been previously mentioned, and may be spoken of as a further instance of the general tendency among these small parts.

In this skeleton, in which, except for these finger and toe bones, the bones had preserved their original relations, there were two noteworthy exceptions, those of the twelfth thoracic vertebra and the cuboid of the right tarsus. The first of these, the twelfth thoracic vertebra, has moved straight out (ventrally) from its place, without disturbing any others of the series, and now lies upon the right elbow, some eight inches from the place where it belongs. In traveling this distance the vertebra has turned around in two planes; it now lies with the ventral surface dorsal, and with the spine ventral; it also has turned around so that the anterior end is posterior, and vice versa.

The migration of the right cuboid, in this extremely well-ordered skeleton, is still more extraordinary, for it was found an inch or two anterior to the misplaced vertebra, fifteen inches from its original position. A line drawn directly between its present and its former position crosses the middle of the misplaced vertebra, proving either that the migration of the cuboid preceded that of the vertebra, or else that these migrations may have taken other paths than the most direct ones. Otherwise than this migration of the cuboid the bones in the entire right foot are perfect and in place as far as the distal row of tarsals, but the three cuneiforms, the five metatarsals, and all the phalanges, are entirely wanting, leaving no trace. It is as though the distal part of the foot was dislodged, or broken off, from the rest, and migrated, and that chance left the cuboid, rather heavier than the others, still within the radius of the body.

A third skeleton which I have been able to study in this way is the male skeleton figured in the same article, Fig. 57. This is also a Pocumtuck, from the same cemetery as the preceding, and excavated in November, 1916. It is in a flexed position, although not folded up so tightly as is the case with the first skeleton studied here, the one from North Hadley, but is quite like the looser folding of the young woman from the same place.

The main lesson taught by this specimen is to note the effect produced by some large burrowing animal, probably a woodchuck

or fox, whose course ran directly through the entire body, at the waist, and absolutely destroyed all bones between the shoulder and hip regions. A marked exception to this is found in the bones of the two arms, which are intact as though the animal went through between them, and suggests that the burrow was made early in the post-mortem history, when the arms were still sufficiently distinct to allow a passage between them, or to be pushed aside by the animal during its course. In general, otherwise, the bones are very poorly preserved, and even the long bones do not retain their external layer intact. When excavating, even the most delicate longitudinal brushing by a whisk broom would open up these bones, and brush out the interior. The skull was simply a mass of minute granules of bone, and only the method of careful uncovering of the parts in the laboratory, and the use of water glass in quantity, preserved the specimen. This method was especially responsible for maintaining the shoulder and hip in their exact relationship, and for the establishment of the prehistoric woodchuck burrow.

The condition of this last skeleton, so much more fragile than the previous one, although subject to exactly the same conditions, and in the same soil, shows that it is much older than the other one, and suggests the way in which bones actually disintegrate and eventually disappear. It suggests also what may have happened to finger and toe bones, even in skeletons which are otherwise in good condition. In this ancient skeleton, perhaps in the ground a century longer than the young woman, there is no trace whatever of either hands or feet, although the arms and legs are still well represented.

Considering, now, the possible agencies which may have been responsible for the displacement of bones, they may be presented in the form of a list, as follows:

- I. Animate forces
 - (a) vegetable
Growth of tree roots, and their subsequent removal through decay
 - (b) animal
Burrowing mammals
moles

- woodchucks
- mice
- foxes
- dogs, hyenas, etc., to eat the body
- Burrowing or excavating insects
 - carion beetles, especially *Necrophorus* and *Silpha*
 - ants; pulverizing the earth
- Other animals
 - earthworms
 - myriapods
 - snails
 - man; subsequent disturbance of the bones, such as in "bone burials"
- II. Inanimate forces
 - gravitation (This is the main cause of dropping or "slumping" of the remains.)
 - rain and other water; subterranean streams
 - frost
 - yielding of a decaying body to tight bands
 - the retentive action of the ligaments; especially the difference in strength of this by the use of different ligaments, under the stress of gravitation or some other constant pressure

The chief action of ants, a very common one, is, not to directly move the bones, even the very small ones, but so to loosen and disturb the earth over an appreciable extent as to make any subsequent dislocation an easy matter. Bone burials, described by Parker as found among Iroquois burials (*N. Y. State Museum Bulletins*, No. 236, 1922, pp. 218-220), are cases where the separate bones, presumably of one body, are placed in no especial order, but quite disassociated. Occasionally all the bones of an arm or leg would be found with their natural relationship preserved, but the limb would bear no relationship to the rest of the skeleton. The author assumes that in this case the body, badly decomposed, as from a tree burial, had been collected into one place, taking the separate pieces quite without attempt to arrange them.

Similar to bone burials may be mentioned "ossuaries": collections of bones, not necessarily of a single individual, collected after the removal of all the flesh and buried in a single grave, often associated with ashes, charcoal, or implements, suggesting ritual.

Intrusive burials in a mound or cemetery are a frequent cause of the disturbance of older skeletons, met with during the ex-

cavation for putting in the later body. In many cases the older bones brought to light are collected at the time and laid in the excavation in close proximity to the newer one, but the serious disturbance occasioned is very evident, even to an amateur.

Occasionally the depredations caused by the growth of roots, especially those of large trees, is considerable. A skeleton may also be "root-eaten" as called by Parker with the position of the bones but little changed. The later disappearance of the roots, often with scarcely a vestige, renders this method of necrokinetics quite unaccountable.

II

NINIGRET'S DAUGHTER

In the museum of Arnold Hall, Brown University, there is a small square cabinet of glass and rosewood, containing a female skull, with the mandible missing. From the known circumstances concerning its provenance we may definitely assert that this skull is that of a female Niantic Indian of the immediate family of the chief, Ninigret, and in all probability that of a young daughter of his, who died in 1660 and was buried on the top of "Indian Burial Hill" in Charlestown, R. I.

The Western Niantics, separated from their Eastern brethren by the migration of the Pequot-Mohegans from eastern New York State in the fifteenth century, or earlier, occupied the territory of the four townships of Westerly, Charlestown, Hopkinton, and Richmond, in the State of Rhode Island, and were joined, after the Great Swamp Fight of 1675, by the few remnants of the Narragansetts. The colony also received an infusion of Negro blood from the importation of African slaves, who first appeared at Portsmouth, R. I., in 1698. Eventually a reservation was set apart for these people by the English, the reservation being about coterminous with the present town of Charlestown. Not until 1880, some forty years ago, and quite within the memory of many of the older members of the tribe, was the reservation given up, and the tribal members made regular citizens of the State of Rhode Island. There are still in Charlestown about two hundred Indians of mixed blood, who still retain the tradition

of belonging to the Niantic-Narragansetts, and who show an interesting mixture of Indian and African facial and bodily characteristics. The writer wishes especially to mention in this connection his good friends, the Rev. Frederick Douglas Thomas and his wife, of the former reservation, whose hospitality he enjoyed on several occasions, and who have preserved in mind and disposition the best of the aboriginal traits.

When this part of the country became first known to the English the Western Niantics were ruled by a chief whose name was Ninigret (Niniglud, Ninicraft, Nenekunat in different English documents)³ and known also under the name of Janemo. His principal residence was at Wekapaug (now Westerly), and he married a sister of the famous "Harmon Garrett" alias Cashawashett. He came on a deputation to John Winthrop at Boston in 1647, and was spoken of as "old" in 1677. His son, called also Ninigret by the English, was not of age at his father's death, and the rule was assumed by his sister Weunquesh, who seems to have been an able ruler. In this rôle she sent a petition to King Charles II of England, complaining of the usurpation of a part of her lands by her uncle, Harmon Garrett, and asking for redress. The case was sent by the king back to the Narragansett Commissioners, Englishmen, who restored to her the rights which she had claimed.

After her younger brother, Ninigret II, came of age, he assumed the tribal rule, and was followed successively by his son, Charles Ninigret, Charles's son George, George's daughter Esther and her brother Thomas, and finally by Esther's son, George, who died at the age of twenty by the fall of a tree. This was between 1700 and 1800, and, as he died without issue, the Ninigret family then became extinct. Other families of royal blood assumed as surnames the names of "Sachem," and "Harry," and these names still occur in that part of the country. The faithful janitor of the Art Club of Providence has the surname of "Harry," and is unquestionably of royal Niantic-Narragansett descent.

³ According to Dr. Frank G. Speck this name signifies "Greasy-face."

Thus the descendants of the Niantic sachems, together with those of less royal blood, and blended with a Negro strain, have now disbanded tribal relations and are lost in the general current of "Americans," or inhabitants of these United States. In and about Charlestown we see them everywhere, serving mainly as farmers and farm helpers, while the more enterprising find their way into Providence, and serve as chauffeurs, hotel porters, and care-takers.

In Charlestown in 1859 a discussion arose one day among a group of young men, two or three of them being of Niantic-Narragansett blood, about the method of burying their dead formerly practised among the local aborigines, whether the posture was a sitting or a reclining one, also if they used the custom of burying their possessions with the dead. Not coming to a satisfactory conclusion with the data at hand, some one proposed that they repair to the old Indian burial ground a mile away, and dig up a body as a test case. The place selected was the hill locally known as the "Indian Burial Hill," long established by tradition as the place of burial of the Ninigret family, and where, ever since the coming of the English, the Indian graves had been placed in a single row, with pieces of unhewn field stone to mark them, quite as in the case of the earliest white colonists in that region. This particular row of graves has since been marked, and protected by an iron fence, and a marble monument, with an inscription, was put there by the State of Rhode Island in 1878; but at that time there was nothing but the row of graves. The marauders selected the one on the northern end of the row, which the Indians believed had been the first grave belonging to the immediate family of old Ninigret, and was ascribed to a younger daughter of his who died in 1660, and here they eventually unearthed the skull which forms the subject of this sketch. At the depth of four feet the diggers came to a platform of flat stones, and beneath these, at about four feet more, they found a coffin, made of logs, split and hollowed out, with the pieces bound together by a chain. This coffin seems to have been made by splitting a log into two pieces, and then hollowing out each piece. The body within was that of a young woman, clothed

in a robe of green silk, and with a square of silk on her head. "From this there descended down to the sole of a foot, a silver chain, which was there made fast to the toe of an outside copper sole of what appears to have been a moccasin. Inside of this moccasin was a leather sole, exhibiting neat workmanship, and indicating a slender and delicately formed foot. Around the waist were the remains of a belt, covered with wampumpeage, or Indian coin, made of sea shells and resembling in form and size small glass beads. A similar article ornamented the lower part of the neck, above which was a large copper necklace and bracelets of wampumpeage surrounding the arms. On the belt that surrounded the waist were fastened silver brooches as ornaments, of various sizes from one to two inches in diameter. At the wrists were silver sleeve buttons. Two coins were found; one of them a copper English farthing, and the other a French silver half-livre, scarcely worn, and bearing date 1650, letter Ludovicus XIII, whose reign began 1643."

In the grave, outside of the coffin were found a great quantity of utensils and ornaments, sufficient to have filled an express wagon. There were iron and copper kettles, skillets, and porringers, and glass bottles in quantity. Many of these seem to have been distributed among the diggers as individual mementoes of the occasion; other things are reported to have been sent to the collections of Brown University. A paper was prepared and read by Dr. Usher Parsons of Providence on "Indian Relics recently found in Charlestown, R. I." from which the above quotation was taken. It was published in *The Historical Magazine* for February, 1863, and when the paper was delivered originally this skull, and certain of the "relics" found in the grave, seem to have been presented to the audience.

What the condition of this skull was when exhibited by Dr. Usher Parsons, whether it had then lost its jaw, whether any of the other bones were preserved, and what happened to the green silk dress, the remains of the moccasins, and the silver chain, are questions that are now quite unanswerable. At some time the skull in its present condition, minus the jaw, was placed in the little cabinet, and in process of time, presumably through Dr. Usher's son, Dr. Charles Parsons, came to Brown University.

Just who this young woman may have been, whose grave was stocked with so many marks of affection and esteem, is a matter of some slight doubt, but it is most probable that she was a daughter of the chief, the first Ninigret.

According to tradition the older Ninigret (who died, as an old man, in or about 1678) had two wives. By the first he had one daughter, Weunquesh, and by the second two daughters and a son, "Ninigret II." One of these two daughters married a Pequot, the son of Chief Sassacus; the other is said to have died unmarried about 1660. As this was the first death in Ninigret's immediate family, her grave came first in the row, and must have been the one selected by the marauders of 1857. Traditionally, also, the father was the next to die, and Dr. Usher Parsons, who seems to have continued the excavations subsequent to the local expedition of 1857, says: "It occurred to me that if the skeleton in the next grave answered to that of the old Sachem, her father, the point would be settled that this skeleton and all the relics found with it belonged to his daughter. Accordingly, with some pains and trouble, I have [succeeded] in obtaining from the next grave a skull and other bones that present exactly the appearance we might expect to see in the skeleton of Ninigret the Sachem of the Niantics. The bones denote the right age, viz. over seventy years, as decided by an eminent dentist, and also by the angle of the lower jaw. The os femoris denotes a man of large stature, and more than six feet high."

This and other passages from Parsons indicate that the marauding of 1857 was followed up pretty thoroughly by himself later, and that whatever evidence concerning the family of Ninigret was once placed in the keeping of the soil has become either destroyed or hopelessly confused. A local Providence antiquary, Sidney Rider, who published occasional papers called "Book Notes," in issues of Feb. 3 and Feb. 17, 1912, brought up again the whole matter of the exhumation of 1857, and maintained that the body then found was definitely that of the Suncksquaw, Weunquesh, Ninigret's oldest daughter, but offered nothing definite in proof of this. He shows that Parsons believed that the body had been that of a daughter of Ninigret, but that

this daughter was Weunquesh, Parsons does not state. We must be content, I think, in considering the skull in question that of a full-blooded young Niantic Indian woman, who died at about the middle of the seventeenth century, and was in all probability a member of the immediate family of the Chief, perhaps his daughter. The singular thing about this case, and one not mentioned in any of the accounts, either of the exhumation or of any of the subsequent excavations by Dr. Parsons, is the matter of the position of the bodies, whether folded up or laid out straight. In graves as old as these undoubtedly were, and as remote from direct influence of the English settlers, the former position would have been expected, and in a case where it is so easy to ascertain, even with the roughest sort of excavation, it is very singular that no mention has been made of such a circumstance. One would have thought that Dr. Parsons, being himself a medical man, and a teacher in Brown University, or, at least, the "eminent dentist," would have noticed so patent a circumstance as that of the general position. The present position of the pieces of field stone that mark the row of "Royal" graves on Indian Burial Hill, suggests bodies laid out straight, as in Christian burial, and these graves in their present condition do not differ in any essential respect from those of the English settlers of about the same time (1700), found scattered all over that part of the State. It is true, and must be remembered, that those thus definitely marked occur mostly along the southern half of the row of graves, which is assumed to be of later dates than those at the north end. Of these, the distances between the two stones, head and foot, of several are as follows, given in inches: 67, 72, 72, 49. This last was probably the grave of a child, and all indicate burials like the English, probably in coffins of English make, of which at least the nails would still be present. The graves at the north end, of which the first was the one excavated in 1857, are not so marked, and may easily have been those of bodies placed in the aboriginal position.

In its present condition, the skull of so many post-mortem experiences, and without its mandible, which is irrevocably lost, appears as given in the outline sketches here (Figs. 44 and 45).

It is that of a rather small and delicate female, with a least frontal breadth of 85.5 mm. and a bi-zygomatic breadth of 124 mm. This latter is rather broad in comparison with the narrowness of the forehead, but strongly suggests the features of an "Indian." The maxillary breadth is but 89.5, again indicating a rather small

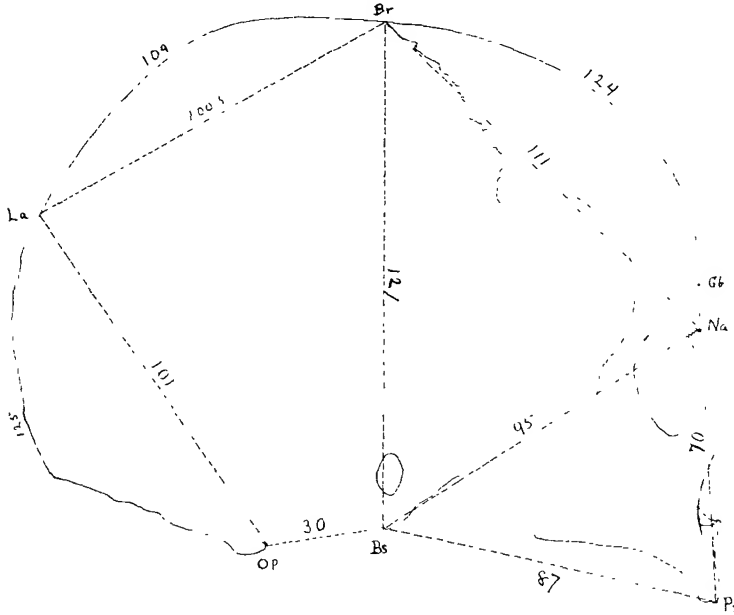


FIG. 45—Diagram drawing, with measurements of the skull used in the reconstructions of Figs 46 and 47. (*Median sagittal craniogram.*)

female with broad cheek-bones. Turning to the cranium, the maximum cranial lengths and breadth, with the cranial index, are $\frac{137}{174} = 78.74$, quite within the range of southern New England Indians. The average corresponding measurements for females of this group were found by Miss Knight to be $\frac{132}{175.5} = 75.43$. The skull under consideration is thus a little less dolichocephalic than the average.

Certain other important dimensions of the cranium are shown in the diagram tracing here given. The measures were taken directly on the skull but correspond closely to those meas-

ured on the diagraph tracing (craniogram). Thus appear both chord and arc of each of the three cranial segments, the *frontal*, *parietal*, and *occipital*, the first taken in the median line from nasion to bregma, the second from bregma to lambda, and the third from lambda to opisthion. These are the following:

	<i>arc</i>	<i>chord</i>
frontal	124	111
parietal	109	100.5
occipital	125	101

The dimensions of the facial triangle, nasion-basion, basion-prosthion, and nasion-prosthion, are also given; respectively, 95, 87, and 70 mm. The median length of the occipital foramen, or basion-opisthion, is 30 mm., and the maximum cranial height, or the line basion-bregma, measures 127 mm.

The cranial capacity, measured by mustard seed, is 1245 cc.

A restoration of the skull, after the well-known method devised by Dr. Wilhelm His, and with the use of the table of average thicknesses found by him for German-Swiss women, was made upon the actual skull, and the results given and figured (*American Anthropologist*, Vol. 14, July-Sept., 1912). These results are shown in Pl. XXV, the first in the upper row, and in Pl. XXVI, the second of the upper row. The original skull, although a very small photograph, appears as the second of the lower row of the same plate, with the substituted jaw of a European female. This jaw, however, was not relied upon for reconstruction purposes, and the final result was the one which the reconstructed upper face seemed to demand. Pl. XXVII gives the reconstructed skull on a larger scale, with a cloth wound about the head to take away the bare look which such reconstructions necessarily have.

Some years after these results, an attempt was made to prepare from this basis of truth a bust which might more fairly represent the actual daughter of Ninigret as she probably appeared in life. To this end the 1912 reconstruction was first taken as a basis, bald and with the pointed chin which always appears by reconstructing a skull without throat, and upon this were modelled a neck and shoulders. These were, of course, wholly imaginary, yet gave to the old reconstruction a better setting than it had had in its earlier presentation. For the neck and shoulders a living

model was selected, who corresponded in size and proportions of head quite closely with the known parts of the daughter of Ninigret, and the final results are those of the two accompanying photographs (Figs. 46 and 47). In the execution of this work I was greatly and constantly assisted by my colleague, Miss Eunice



FIG. 46.—Reconstruction of a young Niantic woman, probably a daughter of Ninigret, a Niantic chief, from southern Rhode Island. This reconstruction was based upon a skull, now in the possession of Brown University. The other parts are hypothetical.

E. Chace, who is mainly responsible for the new parts that appear beyond the reconstruction of 1912.

Although there is much that is imaginary about this new restoration of Ninigret's daughter, and even although we may never know just who this young Indian woman may have been, there is still enough to warrant this attempt to recall an interest-

ing personality of the days of the first settlement of Rhode Island, a daughter of the people among which Roger Williams found himself, when exiled from Boston, and sent into the wilderness. The face is unchanged from that of 1912, since a plaster cast of the one first made was taken, and attached to the standard which served as the foundation for the neck and shoulders.



FIG 47 —Side view of the reconstruction shown in Fig 46.

Simply for artistic purposes the plaster surface was spread over with a very thin coating of plastilina, to give it the same tone as the rest, but in doing this nothing of the contour has been changed. Comparisons of these new photographs with those from the older article will show the face to be the same.

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ALGONKIAN INFLUENCE UPON IROQUOIS SOCIAL ORGANIZATION

By F. G. SPECK

THE problem of social organization in eastern North America seems to be constantly augmenting in importance through the accumulation of knowledge on the forms of social organization among the Iroquois and Algonkian. Social patterns fundamentally different are in force among the native populations of these two widely varying linguistic and economic groups which have nevertheless some resemblance in physical characteristics. The Iroquoian peoples have been generally looked upon as invaders from some region south or west of their present habitat while the Algonkian have been regarded generally, and apparently with good reason, as their predecessors. The former are without exception peculiarized by a matrilineal sib, the latter either by an absence of the sib or else by a tendency toward paternal grouping. That there should have been a correlation of the maternal social feature with agriculture, on one hand, and of the paternal tendency with a hunting life, on the other, is only a natural hypothesis since the Iroquois typify the former and the Algonkian the latter with such consistency and in such a thorough degree. There seems to be nothing in particular at present to disrupt this assumption of the maternal-agricultural complex and the paternal-hunting complex; rather it is strengthened by the assemblage of data coming to hand with each new accession of facts.

The several cases which can now be described, one among the Oka Iroquois, the other to be published later based upon Huron information, seem to bear this out, for they afford an instance where the actual process of change from one type of economic life to another accompanied by a corresponding social alteration turns out to be in accord with expectations.

The social organization of the Iroquois has been intensively studied by several ethnologists of the older school and within

late years by Goldenweiser. They emphasize the feature of the maternal family as the basic unit, and later the clan with maternal tenure of land, or else communism, but the element of paternal inheritance seems not to have been touched upon as yet even though it may have been considered by Goldenweiser.

The Iroquois on the whole have shown most emphatically the maternal pattern with its full sweep of unity in privilege, name and other totemistic associations descending to posterity through the mother's line. And yet in one Iroquois group, that residing at Oka, apparently the only one where conditions still permit inquiry to be pursued on this topic, the uniform rule is broken by the encroachment of the paternal line of descent in the inheritance of land both for agricultural and hunting purposes. The features worthy of attention are those which cluster about the activity of hunting and trapping. And of additional importance is the fact that they are all strictly in accord with what is so generally encountered among the northern Algonkian. This appears to such an extent as to suggest either that this particular Iroquois group has become influenced by an Algonkian complex, by geographical factors, or that an old Iroquois social scheme, derived from a remote hunting period in the early history of the group, had survived among northern outlying bands, especially the Mohawk, where hunting did not succumb to the dominating influence of agriculture. We may leave the discussion of these various possibilities until later when the facts themselves have been presented.

Let us examine the economic situation among the Oka Iroquois who claim our attention. These Iroquois are employing a Mohawk idiom from which fact they may be classified as predominantly of Mohawk extraction. The history of the Oka band shows it to be a composite group descended from converts to the Catholic faith who were previously at Sault au Recollet to the number of about 900, gathered at the mission about 1720, calling themselves *Kanesátake rónq*, meaning "people on the hillside." This refers to the high hills lying behind their village which have given to the village the name of Lac des deux Montagnes. The Iroquois at Oka have maintained a rather close

relationship with those at Caughnawaga and St. Regis. At present there are some 400 in the band; about 150 living on the Gibson reserve in Ontario deserve to be included with them, since they are an offshoot from Oka, thus making the total number over 500. The accompanying information was obtained from Chief Noah Corenthe (Akwiròt'e), in several interviews between 1915 and 1923, while through Sanky Swan, Chief Oka and Mr. Whitebeans inquiry was carried on during an earlier visit.

With the Iroquois here were also gathered some converts assembled from the horde of hunting peoples known as Algonquin whose territories lie between St. Maurice River and the Ottawa drainage area westward to Lake Nipissing. The Iroquois call their Algonquin neighbors "*Horotaks*," "they (who) eat bark," a general term for the northern Algonkian. For almost two hundred years these two groups of different lineage have lived side by side and it is quite inconceivable that influences did not flow from one to the other, though, as was observed by Cuoq who studied their languages in 1886, they had maintained themselves apart. It may be well to remark that the term Algonquin is used to designate specifically the tribal group, while Algonkian denotes the whole linguistic family.

Until some thirty years ago the Oka people were extensively engaged in hunting, at the same time practising the usual Iroquoian industry of agriculture with an intensity hardly less than that among the other branches of the Mohawk group. For a distance of some fifty miles, reaching towards the mountainous country lying north of the Ottawa between the River Rouge on the west, the Mattawin on the north, and Black River on the east, they shared the hunting grounds of the Algonquin with whom they were domiciled under the authorities of the mission. The rivers mentioned, with the exception of the Mattawin, are tributaries of the Ottawa and St. Lawrence. Until that time this region was plentifully supplied with game, but the spread of the new era extending from the metropolis, the settlement and exploitation of the country branching out from Montreal have reduced the forests and the game and witnessed the extension of agriculture and industry to such an extent that few of the Oka people

find it profitable any longer to pursue the chase. Their hunting activities are confined to the fall when they pursue small game under the provisions of the Dominion game laws, like everyone else. Accordingly the social framework which we are discussing in connection with the hunt is a thing of the past at Oka and so has to be studied through memory of practices now known only to men of the older generation. Only a few of the actual territorial boundaries could be obtained. These show that on the headwaters of North River, on its north shore between this river and Mattawin, was the hunting block of Joseph Cree. Below him on the same river was the territory of *Makwans*, "Little Bear," and below the latter were the hunting grounds of the La Flesche family, some being Iroquois and some Algonquin.

Several other ex-hunters were interviewed as to the location of their inherited districts but since they were unable to give definite bounds to them I did not deem it wise to undertake to mark them upon a chart. All agreed, however, that the territories were inherited from father to sons. The hunting territory was called *raon'wentsa*, "his land"—the name referring as well to land employed for agricultural purposes as to that devoted to hunting and trapping. Trespassing on the hunting grounds of other families was forbidden.

Yet there were no boundary marks nor signs placed on the grounds to warn trespassers, nor to indicate the identity of the family proprietor. I was told, however, that blazes were remembered to have been cut upon trees to mark preëmpted territories in cases where there might arise doubt as to their proprietorship. It may be mentioned that in these particulars there is an exact correspondence with what has been recorded among the northern Algonkian. A feature of significance is that conjuring was practised among the men to learn of trespass and even to ascertain in more detail who had stolen traps, taken fur from traps not belonging to them, or even who had sprung traps maliciously in the hunting grounds. Chief Corenthe provided some details of the method of conjuring which belong intimately in our discussion. Conjuring and sorcery were not employed, it is asserted, to inflict evil or sickness upon people, but merely

to ascertain the nature and perpetrator of trespass on another's land, according to our authority. The method of conjuring reminds one of the practice in vogue among the tribes of the southern culture area. The scorcerer, who in this case might be any man of the family according to his calling and power, would erect for himself a small cabin of poles covered with bark. He would gather roots and herbs, the selection of which depended upon his knowledge or his particular revelation. He boiled them in a pot and then in his "cabin." While the boiling was going on accompanied by his particular songs, a "picture" or image of the perpetrator would appear in the bottom of the pot if the medicine were strong enough or if the conjurer's power were sufficient to produce the desired results. To inflict punishment upon the trespasser, the conjurer would then pierce the heart or the eyes of the image and no matter how far away the individual might be the same injury would affect him by sympathetic reaction. The procedure worked not only as a punishment for trespass done but as a warning to others and a preventative against its enactment.

Here as elsewhere in the hunting zone the conservation of the game was important. Conservation was applied especially to the protection of the beaver. The hunters kept account of the animals in each pond and killed only the young each year, allowing the breeders to remain unmolested. At the same time we learn how, as the age of fertility passed, the older ones were then killed and their successors protected. The beaver seem to have been an important asset to the hunters. A religious observance is remembered concerning the disposition of the remains of the beaver. Their bones were kept from falling into the fire, and it was regarded as an outrage if dogs should happen to gnaw them. The bones were frequently thrown into the river. These again correspond with Algonkian observances.

To resume the argument of influence or origin, if we may speak of such a circumstance in referring to such a fundamental method of gaining a living, several noteworthy features stand forth. The hunting grounds were here transmitted from father to son, and even the planting grounds followed the same line of

inheritance, according to the information obtainable. Ordinarily among the Iroquois the inheritance of the planting grounds is supposed to have remained within the maternal clan or to have existed in common. On this point, however, despite all that has been published on the Iroquois people we have yet to find a specific authenticated statement. Investigation of land inheritance among the Iroquois should be started at once. Authorities on the Iroquois generally agree in ascribing communal ownership of the land, or female control of the fields and crops, to this culture group (Parker, Waugh, Stites, Goldenweiser), though the details of either are not exposed. In view of the patrilineal descent of land privileges among the Oka people we must consider possible Algonquin influence. The conditions at Oka correspond in every particular with what we encounter in any Canadian Algonkian group. There would indeed be nothing further to remark about Oka were it not for the matter of language. They are the only Iroquois so far reported who show the Algonkian economic structure. Nor do I consider it very likely that any other instance like it will be discovered among the Iroquois. With the requirements of the case in mind I have searched in vain for it among the Six Nation Iroquois, those at Caughnawaga, Deseronto, and St. Regis. None of these groups has engaged in the chase on an extensive scale for several generations. Agriculture has always been their mainstay of life; in fact their economic basis. And so there would seem to be little reason from internal evidence for imagining that since the formation of the League, say since about 1575,¹ they have exhibited any other type of industry or society than that which has been ascribed to them. The hunting territory institution then, with its paternal descent, fails to appear in their ethnology past or present so far as data now existing go to show.

In spite of the paternal complexion of the Oka group the underlying social unit was the maternal group. The two social patterns existed side by side, segregated about the two dominant industries. The maternal grouping at Oka, however, has recently become obsolete and clan exogamy is no longer practised. The

¹ Based upon the estimate of Hewitt.

descent of chiefs in the female line, the inheritance of names, and other associations with the mother's family, all closely analogous to the same features in other Iroquois groups, have, within the last generation, become matters of memory alone.²

The Oka people seem to have been no less agricultural than the other Iroquois, the difference between them and the others lying chiefly in their combined dependence on hunting, trapping, and cultivation of the soil. Their professional interest in the chase, it strikes me, has, in short, an appearance of being a reaction to contact with the Algonkian, into whose territory they were foregathered by the missionaries and with whom they were associated as converts for two centuries. My interpretation is, then, that we have here a case where the powerful and advanced Iroquois maternal social pattern was affected by contact with a cruder, paternally inclined, hunting people on its frontier—seemingly a case of retrogressive reaction influenced by a factor of frontier residence.

A few surviving reminders of the semi-nomadic hunting life, differentiating the Oka from the other bands in the St. Lawrence valley, struck my attention during the several short contacts I have had with them in the winter. For instance the tools employed in the bush life, the crooked knife, the snowshoe, together with the implements of its construction, the birch bark camp and birch bark canoe, the toboggan and the like, were seen or reported in this band, all of which added to the impression of Algonkian tincture. Nevertheless the Iroquois love of a settled home, and agriculture, with its paraphernalia the wooden corn mortar, ash and splint basketry, together with the socialized community, the wampum ceremonials and other familiar properties, were strong enough to resist influence through contact with the restless Algonkian. An antipathy seems to have pervaded the marital inclinations of the two tribes co-domiciled at Oka, since the associated Iroquois and Algonquin are reported not to have openly intermarried, though a fugitive intercourse may probably have

² Chieftainship is now elective and is restricted to a term. The clan system is regarded as an old but useless custom.

mingled their blood. The radical separateness of the two received its confirmation when about a generation ago the Iroquois, then about 400 strong, seceded in a body from the Roman Catholic Mission, by which they had been brought there, and adopted the Methodist creed through the influence of one of their own number. The fission resulted immediately in the Algonquin abandoning the mission at Oka and retiring with their priests farther north into the wilderness to found a new mission and headquarters at Maniwaki (*mani-(w)aki*, "Mary's land") where they now are, some four hundred in number. It may be of passing interest to add as a final note to this religious tragi-comedy that the last of the Algonquin on the Oka reserve, representing the Algonquin element of 1886, Francis Meshaki, died there five years ago leaving the apostate Iroquois in complete possession of the reserve, and the extensive mission without communicants other than the Canadian habitants who have settled in the neighborhood of Oka—a splendid illustration of the contrast between the submissive, docile, and bush-loving Algonkian temperament and the fiery independence of mind of the socialized, disputatious, and aggressive Iroquois. The original Algonkian had little to give to neighboring cultures. We find him in consequence adapting himself to varied border influences. This is exemplified by the Delaware, the Powhatan division of Virginia, the Wabanaki group, and the Central Algonkian and Shawnee, not to mention the prairie migrants of the stock. It would be strange were not at least one case to appear in Algonkian culture history where the reaction was active rather than passive. So it might be that at Oka an active Algonquin influence is responsible for the paternal aspect of land privilege and inheritance. One other possibility must be considered; that the Mohawk-speaking Iroquois retained an early pattern of economic life brought into the region when the migrant ancestors of Iroquoian culture arrived in the northeast. This, however, seems to my mind less plausible, though we still have much to learn of the earlier history and culture of the ancestors of the League.

If the Oka case were repeated farther south, somewhere in the supposed path of the northward migration of the Iroquois,

we could approach the problem as a survival of an older hunting period before the rise of agriculture. But occurring as it does in nearly the farthest north of recent Iroquois residence penetration it would be difficult to solve it in any other way than through the assumption of Algonkian influence.

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INDONESIA AND THE MIDDLE AMERICAN CALENDAR

By M. W. STIRLING

EARLY in the sixteenth century, when America became definitely recognized as a separate continent, Europeans began to speculate upon the probable origin of the natives. Writers began immediately to discover analogies between certain of the Old and New World culture centers, and to speculate upon the probabilities of their connection. This literature has continued until at the present day it is doubtful if there is a single trait possessed by the more advanced culture areas of America which has not been traced at some time by some author to an extra-American source. Just as no feature of Middle American culture has been overlooked in this process, so it is equally doubtful if any Old World culture center has failed of mention as the probable source of these traits. Egyptians, Assyrians, Phoenicians, Chinese, and Hebrews have all had their sponsors in this respect. Not content with having exhausted all of the known culture centers of antiquity, enterprising theorists have drawn upon mythical or assumed civilizations in order to furnish a parent for our orphan natives. The story of Atlantis and the theory of a lost continent of the Pacific have furnished colorful material for romantic accounts of forgotten migrations.

The highly imaginative accounts of the ancient Mexicans and Peruvians, early set afloat, created an impression of these people which has lasted to this day. The essentially barbaric nature of even the most advanced of the American tribes has too frequently been overlooked. It is because of this misconception that a great many of these attempts at establishing relationships fail at their very inception.

The question of the origin of the Indians themselves has been, at least in a general way, satisfactorily explained. Physical anthropology has established the close affinity of the native

Americans with the Mongoloid peoples of Asia. The theory of the populating of America by way of Bering Strait or the Aleutian Islands is generally accepted by modern ethnologists, although they may disagree as to when these migrations took place and in what manner they were carried out. The more elusive problem—that concerning the origin of the cultural elements found among the Indians—still finds a difference of opinion. Most American anthropologists believe that men the world over are so constructed psychologically that they will react in a similar manner under given stimuli, and that this fact satisfactorily accounts for the parallels frequently found in the cultures of widely separated peoples.

Another group, represented principally by a number of European scientists,¹ maintains that many items are too involved to be explained in this way; that the only explanation of these similarities can be that they have had a common source and have spread from tribe to tribe by more or less direct contact.

The first anthropologist to suggest the probability of an autochthonous development of culture in Middle America was the Englishman, E. B. Tylor.² It was a good many years, however, before the significance of his observations made itself felt, and a good many ethnologists evidently have not yet accepted this view.

In a recent article by Fritz Rock,³ the question recently reopened by Graebner concerning cultural connections between Middle America and Indonesia has received further support. Basing his general conclusions on the work of Graebner, Foy, Krickberg, Kraitschek, and Kreichgauer, Rock attempts to demonstrate that the various forms of the calendar as found in Middle America were transmitted to the Toltecs from southeastern Asia, presumably by way of Polynesia. He bases his conclusions

¹ This group includes most of the present German anthropologists

² Tylor, 1861.

³ *Kalender, Sternglaube und Weltbilder der Tolteken als Zeugen verschollener Kultur-beziehungen zur Alten Welt* (Mitteilungen der Anthropologischen Gesellschaft in Wien, Bd. 52, 1922.) This article contains bibliographic references to all of the principal German works mentioned.

principally upon a chain of alleged survivals of a formerly widespread Venus calendar, together with certain corollary features, found in the Old World and extending into Polynesia. He concludes by stating that the calendar system, especially the Venus calendar, the entire astrological concept, and the schematic cosmograms of the old Mexicans, may be taken conclusively as witnesses of forgotten culture relations with the Old World.

Since the discussion involves a mistaken concept of cultural sequence in Middle America, I have found it necessary to take up that problem in order to clarify the discussion concerning many points immediately pertaining to the article.

Rock believes that he has established the former existence, both in Asia and America, of a threefold calendar system comprising time cycles based upon observations of the sun, the moon, and the planet Venus, associated with which are fixed time divisions for ceremonial and divinatory purposes. Certain elements of the calendar have definite names which have been retained for the most part during its spread in the Old and New Worlds. Other corollary features consist of a series of astrological beliefs together with certain schematic representations of the Universe.

He maintains that the Mexican group of the "Nine Gods of the Night" had their origin in the Old World, and are connected with an astrological division of the heavens as well as the ritual year.

The symbolic representations of heavenly bodies and the symbols of the earth as found in the American picture writings, Rock believes, have their origin in the Old World. Various nature symbols and astronomical observations are associated with the chain of mythical relations indicating a belief in a spiritual and corporeal rebirth, together with an historic division of the universe into great epochs.

The astrological origin of the belief in personal guardian spirits, the cosmic nature of clan totems, the connection of the day names of the Nahua calendar with the lunar stations of ancient Mexico, are all discussed and a connection is assumed between the Old and New Worlds.

The schematic conception of the universe of the Toltecs and its relation to the cosmic significance of the sacred ball court is compared with the relationship between the cosmographic representation of the calabash of the Cora Indians and their sacred dance place.

In addition to the discussion of these topics, Rock has given a new derivation for the Mexican *tonalamatl*, based on the planet Venus.

Before criticizing in detail the more important points in the article I shall outline in brief what I consider to be some of the general faults of the paper.

Great care has been expended and much mathematical skill displayed in the treatment of a mass of technical detail. On the other hand, there has been a corresponding neglect in utilizing basic ethnologic principles.

For example, the author accepts Bork's conclusion that Pueblo clan names have a cosmographic significance, and then puts himself to great pains to prove that this fact in all its detail is paralleled by similar institutions in Asia. Similar instances will be evident later in the discussion.

His method of establishing concordances follows largely that introduced by Graebner, of searching for associated phenomena. In order to accomplish this, he has adopted the method of "special pleading" so often criticized by American anthropologists. That is, he has evidently started with his general conclusion, and then proceeded to establish it and to build up corollary features of the discussion by selecting such evidence as would best suit his end. Of course this is not done intentionally, but the enthusiasm of a preëxisting conviction makes the process almost inevitable.

Although the basis of the article is the discussion of the Toltecs, he apparently has a very confused notion as to who the Toltecs were. In some instances they would seem to be the bearers of the so-called Middle American "Archaic" culture; at other times they appear to be identified with the Aztecs. One fact seems clear however; he considers that chronologically the Toltecs preceded not only the Aztecs but the Maya as well, and that they were the disseminating center for all of the higher culture elements of

Middle America. According to his own statement, he uses Kreichgauer as his basic Toltec authority, including the theory that both the Maya and Nahua tongues have a common origin, Toltec. In addition to the fact that no American anthropologist, with the exception of Radin, would admit any genetic relationship between Maya and Nahua, there is no writer now on this side of the Atlantic who considers that the Toltec culture preceded Maya.⁴ He relies upon Aztec mythology for his information concerning the Toltecs. When put to the test this is of very little, if any, value. He quite overlooks stratigraphical archaeological evidences which give every indication that the calendar in its more complicated aspects developed among the Maya, and was by them transmitted to the highlands of Mexico.

The fault here is not so much with the method as with the selection of authorities.

It is not my purpose to take issue with Rock's theory concerning the existence and wide distribution of a Venus calendar in Indonesia and Polynesia,⁵ although the evidence, based mainly on alleged "survivals," is subject to much the same general criticism as his treatment of the American side of the topic.

I shall, however, attempt to demonstrate that the Venus calendar of Middle America has no connection with the Old World, or with Polynesia, inasmuch as practically every item in the calendar, including the minor subdivisions, can be satisfactorily traced to an origin much nearer home, and, it may be added, more in harmony with the general culture of the Indians themselves. Furthermore, there is ample evidence that the Venus calendar in America originated and was developed among the Maya Indians.

Regarding Rock's theory that the 260 day tonalamatl of Middle America is a form of the Venus calendar related to the alleged 260 day periods of Hawaii, Java, and Mongolia; I shall try to show that, not only does no relationship exist as indicated, but that the tonalamatl has no connection with the planet Venus.

Since the calendar forms the principal topic for discussion, I shall confine my remarks as far as possible to this feature.

⁴ An exception is the Mexican Gamio, who in a recent article supports this opinion.

⁵ Hrozný, in his article, "Das Venusjahr und der Elamische Kalender," has attacked the theories of Husing, Bork, and Schultz.

The first phase of the calendar discussed by Rock is the Lunar-solar type, that is, a solar year divided into 12 or 13 months. This type of year—the usual form being 13 months of 28 days with various methods of intercalating—is found widely spread in Asia. Rock traces it in Assyria, Irania, and Egypt; in China, Mongolia, Siberia and Siam. It is found also among the Malays and throughout Indonesia generally. Frequently each month has a regent deity who is assigned a certain residence in the heavens. In Polynesia a similar division of the year is found in New Zealand and Tahiti.

A significant distribution is seen by Rock in America. This division of the solar year is found, not only in Mexico, but among the Hopi in the Southwest, among the Haida and Nutka of the Northwest Coast, and among some of the Eskimo tribes. "These, at least know a 13 month year," says Rock, "but considering all the tribes of North America, this is comparatively rare." Evidently Rock has not had access to very much data on North American calendars. Leona Cope,⁶ who has treated this subject in detail, shows that a solar calendar of 13 lunations is found distributed throughout the North American Continent. The type of calendar based on direct astronomical observations has been found among 23 tribes in at least four widely separated culture areas north of Mexico, namely the Southwest, California, the Northwest Coast, and the Eastern Eskimo.

The solar year as determined by other natural phenomena and similarly divided into 13 lunations, is found in practically every culture area of North America. There is no definite distribution of the tribes using 12 and 13 month calendars respectively. Some, such as the Pawnee, have 12 and 13 months alternately.

Aside from the daily apparent revolution of the sun, the most obvious celestial phenomenon is the waxing and waning of the moon. Marking time by successive lunations is universal. Even though the solstices are not definitely observed, the recognition of landmarks in the different seasons is inevitable to either a hunting or an agricultural people. The recurrences of these land-

⁶ Cope, 1919

marks indicate an obvious time cycle. I believe, therefore, that a lunar-solar year is a natural development which has practically no significance as a factor indicating contact. The assigning of a regent god to each lunation is likewise a normal development, especially since the god usually takes the form of some characteristic of the month represented. Thus the "Maize planting" month and the "Deer rutting" month may become known respectively as the "Maize" month and the "Deer" month, and the symbols of the maize and the deer will represent the time periods.

The observation of such astronomical phenomena as were used in constructing the calendar as it existed in America required no knowledge of celestial mechanics. The period between the solstices is the same whether it be observed with a notched stick or a high-powered telescope. The observation of the movements of the planets is but a short step in advance. Primitive man the world over has noticed the difference between the apparent movements of the planets and of the fixed stars. The brilliance of Venus makes this planet the most conspicuous heavenly body, with the exception of the sun and moon.

Basing his conclusions on the work of Husing, Bork, and Schultz, Rock maintains that the Venus calendar originated in Assyria. From this center it spread at an early date over a large part of the Old World. It was in vogue in southern and south-eastern Asia and was carried into Polynesia before the sixth century, finally being transmitted to the Toltecs. This calendar was marked by certain distinctive companion features which associated to form a "Graebnerian" complex. In its primary form this calendar consisted of a time cycle comprising eight months of $32\frac{1}{2}$ days each. The manner in which Rock derives this period I shall describe later.

Other characteristics of this calendar are: groupings of the various time cycles into weeks of eight and five days, with evidences of intercalary periods; a division of the day or night into "hours," and various other time cycles. Occurring with the Venus calendar is the cosmogram of the nine heavens and the magic number square with the constant 15. In fact, almost any time

cycle which may be recognized, whether for ceremonial or other purposes, is forced into agreement with some fraction of a Venus year. The synodical revolution of Venus requires a period of 584 days. This is naturally divided into four parts of 236, 90, 250 and 8 days, the first and third of these being the periods when Venus is visible as the morning and evening star respectively. The two shorter periods represent the time of invisibility between the conjunctions of the planet. This gives the theoretical mind a good set of figures to manipulate. When fractions of these periods, or halves of various sums of them, are taken, the possibilities are almost unlimited. Whenever Rock finds a time cycle in the region under investigation, he contrives to demonstrate that it represents a fraction of a formerly prevalent Venus cycle, or that it represents one of the characteristic companion features or subdivisions of the Venus year. If these cycles did not combine exactly to form one of the many phases of the Venus cycle, extra days would be added or dropped to make them agree, after the fashion of the five-day period of the Mexican solar year. This has the virtue of making the method beautifully flexible.

The 30 day month divided into six weeks of five days each, and a 35 day month divided into five weeks of seven days each, as found in Indonesia, could only have come from observing Venus, according to Rock. Granting the existence of these periods it would be as easy to explain them as modified lunar periods, as to make of them altered Venus cycles.

The calendars of New Zealand, the Chatham Islands, and the Marquesas are compared to the Mexican calendar. The wide variations in detail are explained by a complex juggling of figures. In Java, he finds the eight day week of the Toltecs existing side by side with the five day week. The supposed eight hour division of the day in Mexico is compared to an eight hour division of the night in Java. The Toltecs, says Rock, divided heaven into eight parts, which is analogous to the eight regions of heaven as conceived in Indonesia. Each of these is associated with an eight year cycle.

This method of establishing concordances, aside from its artificial nature, is based on an obvious fallacy. The various

calendars in America, which are related directly or indirectly to the Mexican calendar, are subject to almost limitless variations. The various local ceremonial periods are incorporated into the calendar in any manner that is most convenient. Therefore, when Rock finds a fact concerning the calendar in Asia, he has but little difficulty in finding a parallel somewhere in America. It is true that many coincidences occur between cultural phenomena of the New and Old Worlds. When we consider the vast array of details which go to make up a culture complex, it would be most remarkable if such coincidences did not exist. If it were possible to take every fact of social and material culture from any Asiatic or Polynesian group, give them all equal weight, and compare them fact for fact with any American group, the proportion of coincidences would no doubt be no more than a normal chance agreement.

Thus when an investigator, in making his comparisons, not only uses the evidences offered by the two culture centers being compared, but includes in that evidence the multifarious ramifications of these centers, it is not surprising that numerous parallels can be drawn. Careful scientific inquiry should not follow a policy of emphasizing parallels, and ignoring differences, where they exist.

Rock discusses at considerable length the divisions of the tonalamatl, and the problem of its origin. The tonalamatl is found interpreted differently in the old American codices. There was for example a tonalamatl divided into four parts, one into five parts and one into ten parts. In the first of these, the 260 day period was divided into quarters of 65 days, to each of which was assigned a direction, a color, an animal, and a tree. Each of these 65 day periods is further subdivided into two periods of 30 and 35 days.

The tonalamatl of five parts comprises five periods of 52 or 4×13 days. To each of these was likewise attributed a god, a color, etc.

The tonalamatl of 10 parts contained 10 periods of 26 days each.

Rock, following the lead of Seler, accepts the division of the tonalamatl into these periods on the basis of the fact that we find

them arranged in columns comprising these subdivisions in the codices. It seems significant that these were the only arrangements possible which allowed the tonalamatl to be recorded in columns of equal length. The factors of 260 in addition to the elementary 13×20 are,

$$2 \times 130$$

$$4 \times 65$$

$$5 \times 52$$

$$10 \times 26$$

Obviously, as a device for recording the signs, the arrangement of 2×130 would be awkward. The other three possibilities which formed a complete block were used. If the symbolic use of these subdivisions was as complicated as Seler makes them to be, it is quite natural to suppose that the idea of using these periods as distinct units developed from the fact that, owing to the manner in which they were written, it became customary in using the codices, to think of the day signs in these fixed groups of days.

Since the computations used by Rock in his derivation of the tonalamatl are quite involved, it has seemed best to repeat his process in detail.

He selects as his starting point the exposition of the tonalamatl as found in the Codex Borgia (here arranged in five columns distributed over the four quarters of the universe). Preliminary to discussing this arrangement, he refers to the mythology of the Toltecs and the resultant method of casting astrological horoscopes. For this purpose there served so-called astrological indexes. The starting point of such indexes was formed by analogies drawn from one periodic movement of the heavenly bodies as applied to another. Upon such analogy is based among other things the law of correspondence of the various phases of the planets as compared to the periodic phenomena of time and space, which were both regarded as forms of manifestations of the supreme deity. Thus the same principle of division was applied to both time and space. An old method of time division in the Toltec district was the division of the year into 13 lunar months of 28 days each. To this corresponded the division of the heavens into 13 special heavens, and of the lunar orbit into 28 lunar sta-

tions. To each of the days special names seem to have been given as was the case in eastern Asia, the days being given the names applied to the lunar stations. Just as the 28 day month was arranged in four weeks of seven days each, so was the lunar period divided in a way to correspond to the four heavenly quadrants of seven lunar stations each. In addition to the number four, the number eight played a certain rôle in connection with the gods of the eight heavenly directions. Number eight also played an important part in the Calendar. Eight solar years or 2,290 days formed a period equal to five synodical Venus years. Moreover eight months of 28 days each formed a period of 224 days, which period was only one day shorter than one sidereal revolution of the planet Venus.

Just as the residences of the gods of the eight directions were assumed from the 28 lunar stations, so was an eight day week formed from the lunar period of 28 days. This week was equivalent to the period of invisibility of Venus during its inferior conjunction. The lunar month of 28 days, by the subtraction of these eight days, now became the Venus month of 20 days. It was believed that during these eight days the moon god transformed himself into the morning-star god.⁷ After the subtraction of the residences of the gods of the eight directions from the 28 lunar stations, the lunar orbit now had only 20 god residences, which were distributed into four groups of five lunar stations each. Accordingly the month of the new calendar contained only 20 days, which were in four weeks of five days each. Similar to the division of the solar year into 13 lunar months, the Venus year was also subdivided into 13 periods, but of only 20 days each. Corresponding to the eight celestial directions, the Venus year was further divided into eight periods of $32\frac{1}{2}$ days each. As calculation with fractional periods was impracticable, and since $32\frac{1}{2}$ could not be equally divided into five day weeks, it was necessary, in order to avoid half week periods, to shorten one month by one-half a week, so that it embraced only six

⁷ The Annals of Quauhtitlan say in regard to this period, "At the time when the planet (the evening star) was visible in the sky, Quetzalcoatl died. And when Quetzalcoatl was dead he was not seen for 4 days; they said that then he dwelt in the underworld, and for 4 more days he was weak and emaciated; not until 8 days had passed did the great star appear as the morning star."

weeks of five days each. At the same time it was necessary to add to the following month not only half a week but a whole seven-day week. There resulted, therefore, for the two months of each yearly quarter, the following figures:

1. One month of 6×5 (30 days),
2. Two months of 7×5 (35 days),

forming together one quarter of the five column tonalamatl.

The length of the Toltec Venus year, or so-called tonalamatl, further leads to the question as to the grounds for the determination of the year as consisting of 260 days, other than by the correspondence of the time and space calculations. In order to do so it is only necessary to compare the length of the tonalamatl (260) with the length of the sidereal revolution of Venus (225) and with half the synodical revolution (292)

$$260 - 225 = 35$$

$$292 - 260 = 32$$

The difference of the first two figures is 35 days, the equivalent of a maximum Venus month, whereas the difference of the last two figures also constitutes a Venus month, but a minimum one of 32 days.

This theory might be discussed in spite of its many improbabilities were it not for the fact that it involves a knowledge of the sidereal period of Venus which certainly was far in advance of any astronomical knowledge held by the ancient people of Mexico. From what is known of the conservatism of primitive people, it is asking too much of the imagination to believe that they could have intelligently received entire as complicated a feature as this calendar and retained it.

Practically everyone who has written upon the subject has suggested a new derivation for the tonalamatl, so with this precedent I shall venture a suggestion which at least has the virtue of simplicity, and which seems more in accord with the general culture of the people with whom we are dealing. Following this, I shall discuss the evolution of the calendar which arose from this primary time cycle.

As has been already indicated, the *e* is ample evidence of an archaic calendar in this region consisting of a solar year divided

into 13 lunar periods. It is also well known that a vigesimal system of numeration prevailed. We have undoubted evidence of its use among the Maya in ancient times.⁸ A natural explanation of the tonalamatl would be, that the Maya found 13 complete lunations differed so much from equalling the solar year that the method became unsatisfactory. Therefore, the length of the month was arbitrarily changed to agree with the vigesimal number system,⁹ thus establishing a fixed cycle of 260 days which formed the basis for all later developments of the calendar.

There is more evidence to support this theory than its mere psychological probability. The "long count" of the Maya which is found in the earliest inscriptions is based on a progressive series of twenties, except for the "tun" period in which the multiple was changed to 18, obviously to make this period approximate the solar year. This serves as even stronger evidence, since it indicates a previous correlation with the solar year.

Spinden¹⁰ has demonstrated that the Maya name for the 20 day period, "uinal," has been derived from the word "u," meaning "moon." It is significant that the name has no connection with the word "ka" (man) which means "20."

Further evidence of this nature is furnished by Morley who in discussing the primary glyph of the supplementary series as found in the inscriptions says, "The principal element of glyph A was undoubtedly the character used by the Ancient Maya to represent the moon; but, in addition to this astronomical significance, it has a purely numerical meaning as well. Through some chain of associations, at present lost to us, it also stood for the number 20."¹¹

Thus we have two separate items pointing to a former connection between the number 20 and the moon.

The very fact that the supplementary series deals with lunar calculations would further indicate the survival of the archaic

⁸ Thomas, 1900.

⁹ This fact has been used to account for the use of the numeral 20 in the tonalamatl, by most writers who have considered the matter.

¹⁰ Spinden, 1917

¹¹ Morley, 1915

lunar months which, as Morley demonstrates, consisted of 28 and 29 days alternately.

In view of the fact that the period of 260 days coincides with no observable astronomic phenomenon, it would seem that such an explanation as the above is much more in accord with the cultural development of the Maya than the abstruse and artificial theories of Förstemann, Seler and Rock, each of whom, using different methods, connects this period with the planet Venus.

That the calendar as a whole has grown out of this fundamental time period can also be demonstrated. Since Rock assumes that the Toltec calendar was the earliest in America, I shall give a few of the evidences indicating the greater antiquity of the calendar among the Maya.

Förstemann points out the fact that the terms used in the naming of features of the calendar are much more archaic in Maya, Tzental, and Quiche than in Nahuatl, where living terms of speech are used.

Seler is of the opinion that the calendar developed in the Maya-Mixtec-Zapotec region and suggests that the nature of the Zapotec calendar indicates that it was the intermediary stage between Central America and the Mexican Plateau.¹² Seler, however, thinks that the Toltecs can be identified with this region. A study of the archaeological remains in the two regions shows us that, at a time when the Maya were erecting stone buildings and dated monuments, the Toltecs had not yet risen from the archaic horizon. Toltec art and architecture show an obvious debt to the Maya. The use of faced pyramids as bases for stone temples, the style of art, and many other items indicate direct borrowing.

The fact that we have actual contemporaneous dates carrying us back to the beginning of the Christian era, shows that the southern Maya were already using the calendar at a time which precedes by several centuries even the date of the mythologic coming of the Toltecs. The fact that the calendar developed to a

¹² Morley believes that the Maya originated in the coastal region of Mexico, probably between the Grijalva and Panuco Rivers, and that while in this region they developed the calendar.

much more intricate and much more efficient instrument among the Maya than it did on the plateau of Mexico indicates a longer period of development in the former region. The fact that there was no definite, uniform calendar system among the Toltecs and other Mexican tribes, whereas the Maya calendar retained its essential homogeneity throughout the course of Maya history, at least points to a much greater probability of the well-established system having been the source of the more differentiated calendars. The only evidence we have concerning the antiquity of the calendar among the Toltecs is derived from Aztec myths. Since these fail utterly when compared with known facts, this evidence should be discounted.

The fact that the calendar has evolved as one element of the general cultural evolution¹³ of this region is indicated in many ways. That the calendar in all its later complications is based on a preëxisting vigesimal system has already been indicated, also the fact that the calendar is bound up as much in this unique numeral system as it is in astronomical observation. All of the time cycles used in this area are based upon this fundamental system.

The tonalamatl, probably developing out of a modification of the lunar-solar year, was the foundation of the calendar. Its early inception is indicated by its wide spread in Middle America as compared to the restricted distribution of the higher features of the Central American calendar. Morley has demonstrated that the names of the various periods which go to make up the long count have been derived from life forms, which have been modified first to parts and finally to conventional representations. This is probably true of all of the time elements. These names have all been derived from objects familiar to the region.

Bowditch was the first to indicate that the names for these periods have been chosen for their phonetic value, after the same manner as the rebus names of the Aztecs. Thus one of the elements of the katun is represented by a fish, not because *piscēs* was the heavenly region connected with this period but because the

¹³ The evolution of culture in Middle America has been best presented by Spinden. See Spinden, 1917.

word for fish "cay" had the phonetic value of "ka" (20). Thus katun means a period of 20 "tuns." Similarly the frog is used to indicate "uinal" since the word for frog is "uo" which approximates the phonetic value of "u" meaning "moon."

Through the dates in the inscriptions of the southern Maya, we can place the time when the various augmentations and accretions of the fundamental long count first appear.

The supplementary series or lunar count is lacking in the earliest inscriptions. It appears first on Stela 3 at Tikal, erected during the 2nd katun of the 9th cycle. The supplementary series itself shows a gradual growth, certain glyphs being added in later inscriptions.

The earliest use of the so-called "secondary series"¹⁴ dates (Stela 36 at Piedras Negras) does not appear until 280 years after this.

The Venus symbol does not appear in the earliest inscriptions. We first find symbols evidently not directly related to the calculations, but forming part of the celestial band, or used as connecting elements, such for example as occur on Stela 4 at Yaxchilan, the date of which is in the 14th katun of the 9th cycle.¹⁵

On Stela "K" at Quirigua, dated in the 18th katun, there appear what are evidently calculations which may deal directly with a Venus time period. During the great period these become much more frequent, but it is not until the final period of Maya history, to which the codices belong, that we have intricate and accurate calculations referring to Venus. This would indicate that the planet was recognized and observed for a considerable length of time before it was incorporated into the calendar.

After the middle period of Maya history we find that the long count is practically abandoned in favor of these later develop-

¹⁴ The beginnings of this process may be seen at Copan, where period ending dates as applied to lahuntuns are first exemplified on Altar Q, which bears the date 9-4-10-0-0. A period ending date applied to the tun is found on a peccary skull from Copan engraved with the date 9-7-8-0-0.

¹⁵ The earliest known use of the Venus sign is on Altar K (9-12-16-7-8) at Copan, where it occurs in the introductory glyph.

On Stela J (9-13-10-0-0) at Copan the Venus symbol is first found applied to the sign "Lamat."

ments,¹⁶ which comprise the majority of the calendrical inscriptions of northern Yucatan.

This development, coupled with the native nomenclature connected with the various elements of the calendar, precludes the possibility of its exotic origin.

Rock has based his conclusion concerning the antiquity of the Toltecs partly upon Kreichgauer's linguistic evidence, and partly upon Aztec mythology. In this he follows the lead of Förstemann and Seler who assumed on traditionary evidence as related by Sahagun, Ixtlilxochitl and others that the Toltecs invented picture writing and the calendar. It seems only natural that tradition should ascribe these inventions to the people from whom they were obtained.

Seler and Förstemann have attempted to substantiate this view by demonstrating the existence of Toltec influences in Central America. Förstemann pointed out the fact that Nahua place names abound in the region of the old southern Maya civilization. It is now definitely known that a comparatively recent Nahua invasion of this region took place, following the abandonment of the great Maya cities, with which these new comers had no connection whatever. Such localities as Santa Lucia Cozumalhuaipa were obviously of a later age. Their art reflected, not that of the Maya, but the highlands of Mexico. The Toltec influences in northern Yucatan are the result of the historic Toltec invasion at the close of the final period of Maya civilization. The "Popul Vuh" identifies the Quiches with the Toltecs. This has frequently been used as evidence, in spite of the fact that not only the geographic location but the linguistic evidence points to the fact that this is in error. The writers of this document undoubtedly knew nothing of the early history of this region.

The Mexican documents usually accepted as fairly authentic history are the "Annals of Quauhtitlan" which carry us back to 635 A.D. with reputed accuracy, and contain dates as early as 245 A.D.

¹⁶ By the middle of the great period the initial series dates were almost entirely supplanted by this shorter method. At Siebal and Nakum, which have dates as early as 9-16-0-0-0, there is not a single initial series date known.

The writings of Ixtlilxochitl give us what purports to be a genealogy of Toltec chiefs, which takes us in an unbroken line back to 726 A.D. This would be all right, excepting that what we know of the facts points to the conclusion that these dates mean nothing at all. In the first place, a study of the stratified archaeological remains at Toltec sites shows an apparently much later rise from the archaic horizon than these records indicate. Secondly, we know that the Toltecs aided the city of Mayapan during their wars with Chichen Itza about 1200 A.D. Yet this date is 126 years after the recorded downfall of Tula.¹⁷ However, the fact that Tula must have been flourishing at this time is definitely indicated by the fact that there are many unmistakable analogies in the art and architecture of Chichen Itza and Tula which point definitely to a contemporaneous existence. The books of Chilán Balam give us a written historical record which is absolutely verified by archaeology, showing that even the most recent historical phases of the Annals of Quauhtitlan must be entirely wrong. Add to this the fact that this very significant conquest, which took place after the incidents related in the Annals, had been absolutely forgotten on the highlands of Mexico, and we have, I think, a fair example of the reliability of Aztec mythology.

The actual course of Toltec history I believe to have been much more brief than is usually considered to be the case. From what archaeology teaches us, the Toltecs and other neighboring tribes of the highlands of Mexico were influenced by contact with the Maya towards the end of the southern period of Maya history.¹⁸ They developed on this basis a number of characteristic features of their own in regard to art and architecture, which were returned to the Maya during the period of the decline of these powers. Both the beginning and the end of Toltec history lie within the range of Maya history.

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¹⁷ This has been discussed in some detail by Spinden (1917).

¹⁸ According to Morley, Maya culture spread to the several Zapotec, Mixtec, Nahuatl, and Totonac tribes of southern Mexico about the close of the Old Empire (10-2-0-0-0). Morley, 1920.

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A NOTE ON SARCEE POTTERY

By EDWARD SAPIR

IN his "Material Culture of the Blackfoot Indians" (*Anthropological Papers of the American Museum of Natural History*, 1910, vol. v, pp. 1-175) Dr. C. Wissler makes no mention of the use of pottery in that tribe. In discussing the household utensils of the Plains Indians in his "North American Indians of the Plains" (*American Museum of Natural History, Handbook Series No. 1*, 1912, p. 69), however, Wissler remarks:

Pottery was made by the Hidatsa, Mandan, and Arikara, and probably by all the other tribes of the village group. There is some historical evidence that it was once made by the Blackfoot and there are traditions of its use among the Gros Ventre, Cheyenne, and Assiniboine; but, with the possible exception of the Blackfoot, it has not been definitely credited to any of the nine typical tribes.¹

In his book on *The American Indian* (first edition, 1917), the same writer states (p. 67):

As nearly as can be told, at the time of discovery, North America had but one large area in which no pottery was made. If we draw a line from Ottawa to the mouth of the St. Lawrence and another to Edmonton, and then one from Edmonton to Los Angeles, we shall have, in the rough, the northern boundary to pottery making. There seems to have been a narrow strip down into the bison area that should be excepted. This extended down through the country of the Arapaho, Cheyenne, Kiowa, and Comanche. On the other hand, certain early information for the Ojibway, Cree, and Blackfoot westward from Winnipeg, indicates that they made pottery; but this about exhausts the exceptions. Practically the whole of the Pacific belt and the great sweep of the caribou area is without pottery, but the Eskimo of Alaska and eastward at least as far as Coronation Gulf made it. Archaeological evidence does not change the boundary; hence, we may infer that the distribution of pottery was still in progress at the opening of the period of discovery and that it was distributed from the South. In Siberia we find a pottery somewhat like that of the Eskimo, which suggests that in this case the trait is intrusive from Asia. Yet, we must not overlook the

¹ See also Wissler's note (*Science*, April 26, 1912, p. 666) on "recent evidences for the former use of pottery by the Blackfoot Indians and its apparent similarity in type to that used by the Menominee and the Saulteaux."

possibility of contact with North American potters around Hudson Bay, a region whose archaeology is absolutely unknown. The improbability of this arises from the absence of the trait from the greater part of the caribou-hunting peoples, its tendency to fail the most typical bison hunters, and that its encroachment in each case resembles the fringe of an adjoining area. We see that its extension out into Saskatchewan and Alberta is coincident with the distribution of Algonkian-speaking tribes: the Blackfoot, Cree, and Ojibway.

Any information, no matter how scanty or unsatisfactory, that bears on the marginal distribution of aboriginal pottery in America is probably welcome. There is good evidence that the Sarcee Indians, of Alberta, used pottery in the old days, say one hundred years ago or even later. In the summer of 1921 Mr. D. Jenness learned from a Sarcee Indian named Otter that originally his people used clay pots, the manufacture of which they had been taught by the Maker. Iron pots were introduced at the same time as horses. To make a pot the clay was kneaded and hollowed out by hand. After it was shaped and dried in the sun, it was laid with its mouth towards a fire where the smoke would permeate it. This saved it from cracking. It is not entirely clear from this whether the pot was properly fired or consisted merely of a dried and smoked clay.

In the following summer I learned from two other Sarcee Indians, a middle-aged half-breed named John One-Spot and an old full-blood Indian named Two Guns, the owner of the only extant Sarcee beaver bundle, that it was a matter of common knowledge among them that the tribe formerly made extensive use of clay pots and that in telling stories of the old time they were in the habit of referring to "the days when clay pots were still used." When John One-Spot was a boy, he learned much about the older life of the Indians from an old Sarcee woman. She told him about the methods of making and using pottery, but unfortunately he could manage to remember but the veriest fragments, not altogether coherent at that, of what he had learned. The Indians do not seem to have been seriously hampered by their habit of traveling about. When the horse came in and locomotion became relatively rapid, pottery, replaced in any event by trade vessels, was doubtless an inconvenience, but in the earlier days the clay vessels were carried by their handles of withes or bone by

the women and children, who walked by the side of the dog travois. John One-Spot had very unclear ideas about the exact material that was used. He stated that the Indians used to repair to the Red Deer River country for their clay, if clay it was. The proper material was a whitish "stone" (limestone?) that was burnt down to a powder and then used. Apparently the reference was here to some ingredient that was mixed with the clay. The clay vessels, when shaped by hand, were baked black by fires applied both inside and outside. When the fire burned out inside, it was renewed until the pot was thoroughly baked. Before the burning, holes were cut out near the rim of the clay vessel so that a willow handle might be fitted on later. The pots were of different shapes. One was a kettle for the boiling of water, another was a shallow tray in which the meat was dished out from the pot. Besides handles of willow withes, the Sarcee also used handles of bone, which had been softened by boiling and bent to the desired shape. Also horn was used to make hoop-like rims for the tops of the deep vessels.

Two Guns, the older Indian, stated that he had heard that in the early days, before he was born, the clay vessels were as well made as the vessels in use among the whites today, but the Indians have forgotten how to make them properly. There was a way of smoothing the surface of the pots, but this is no longer remembered. Not only was the clay modeled into pots and trays, but pipes were made of it as well. When Two Guns was a boy, he saw an old Indian smoke a clay pipe; this was the only actual example of Sarcee pottery, or rather of pottery used by the Sarcee, he had ever seen. It is not likely that even the oldest living Sarcee has ever seen a native vessel of clay. Two Guns further stated that children's toys also were made of clay—images of dogs, buffaloes, and other animals and objects. Asked whether there were any Indians still living who could make models of the old-time Sarcee pottery, Two Guns replied that no one could be depended on to make them accurately but that his wife would make me a couple of samples. In a few days he brought me a cylindrical pot and a tray (Fig. 48).

Two Guns explained apologetically that his wife, though one of the oldest Sarcee women, had not seen them made. They were in use before her grandmother's time. She claimed merely to have made them as well as she could manage from such descriptions as



FIG. 48.—Crude models of Sarcee pottery, made by wife of Two Guns. Victoria Memorial Museum, Ottawa, nos. V. D. 255 (cylindrical pot) and V. D. 317 (meat tray).

she had heard years before. The models are evidently poor. The clay is presumably not of the right quality, it was not sufficiently fired and is therefore hardly more than a dried, unbaked, and somewhat crumply earthenware, and the vessels are too clumsy

in outline and too heavy to be of practical use. John One-Spot thought the present specimens were failures partly because of uncertainty in the method of manufacture, partly because the proper clay had not been used. However, if suitable material was not available, he explained, emergency pots could be and were made of ordinary clay.

There are several features about these crude models that are interesting and possibly significant. The willow-handled, flat-bottomed, cylindrical pot is an aberrant pottery form and legitimate doubts as to whether it can be considered a truly traditional type weaken the force of any remarks which one may make about it. Both the cylindrical pot and the tray look almost like older Athabaskan models in bark (or wood, if one thinks back to Alaska), which have been crudely adapted to a poorly mastered pottery technique. On the other hand, Holmes figures a flat-bottomed or but very slightly round-bottomed clay pot from the Alaskan Eskimo, credited to Nelson, in his article on "Pottery" (*Handbook of American Indians North of Mexico*, Part 2, p. 298), though I find no mention of such high earthenware vessels in Nelson's monograph on "The Eskimo about Bering Strait." Most of the examples of Alaskan pottery vessels that we possess are shallow, tray-like forms (see, e.g., Plate XXVIII of Nelson's monograph). Murdoch, in his monograph on "The Point Barrow Eskimo" (pp. 91, 92), remarks:

I obtained three fragments of pottery, which had every appearance of great age and were said to be pieces of a kind of cooking-pot which they used to make "long ago, when there were no iron kettles." The material was said to be earth, bear's blood, and feathers, and appears to have been baked. They are irregular fragments of perhaps more than one vessel, which appears to have been tall and cylindrical, perhaps shaped like a bean-pot, pretty smooth inside, and coated with dried oil or blood, black from age. The outside is rather rough, and marked with faint rounded transverse ridges, as if a large cord had been wound round the vessel while still soft.

Murdoch compares this ware with "the cement for joining pieces of soapstone vessels mentioned by Boas ("Central Eskimo," p. 526) consisting of seal's blood, a kind of clay, and dog's hair."

More noteworthy than the forms of the Sarcee models, because less open possibly to the charge of being spurious evidence, is the

fact that their maker mixed the clay with bits of twigs and with horse hair. The exposed surface of a charred twig is visible in the figure of the cylindrical pot, and tufts of hair in both figures. These materials were evidently intended to stiffen the ware and suggest a rather imperfect knowledge of pottery technique, particularly of firing, on the part of the old Sarcee potters. The Sarcee use of horse hair (originally, no doubt, dog hair or caribou or buffalo hair) is faintly suggestive of the Alaskan Eskimo use of feathers mixed in with the clay.

Archaeological evidence proves the former use of pottery in Alberta, though the finds are scanty. In the Victoria Memorial Museum at Ottawa there are two such finds. One (no. x.C.24) consists of fragments of one pot, fabric- or cord-marked, from Red Deer River, west of the fourth principal meridian of Alberta; it was collected by a geologist, T. C. Weston, in 1889. The other (no. x.C.25), from Long Lake, Alta., is the fragment of a crude rim of a pottery vessel, decorated with transverse notches along the top of the rim; it was presented by W. Dickson, of Pakenham, Ont., in 1890.

It is natural to look upon the pottery of the Blackfoot and Sarcee country as but a marginal outpost of the more intensive pottery culture of the Mississippi Valley and the western Great Lakes. Is it not at least possible, however, that the old Sarcee pottery, of which the Indians retain such a clear tradition,² is the survival of a northern type that is historically connected with the Eskimo ware or that it represents a compromise between northern and eastern streams of influence? It is useless to speculate at present, but it is worth while reminding ourselves that we do not know anything about the archaeology of the region extending from Hudson's Bay west to the Rockies. It is by no means a

² It may not be without significance that while Dr. Wissler's intensive researches among the Blackfoot apparently disclosed no knowledge on the part of the present Indians of their former use of pottery, Mr. Jenness and the writer each casually learned of pottery in the course of a brief visit to the Sarcee. This is probably a mere accident, but it may indicate that pottery was more extensively used among the Sarcee than among the Blackfoot or, at any rate, the Piegan, the southernmost of the three Blackfoot tribes. The early habitat of the Sarcee, as reported by Mackenzie and other writers, was pretty well to the north, in the headwaters country of the North Saskatchewan and Athabasca rivers.

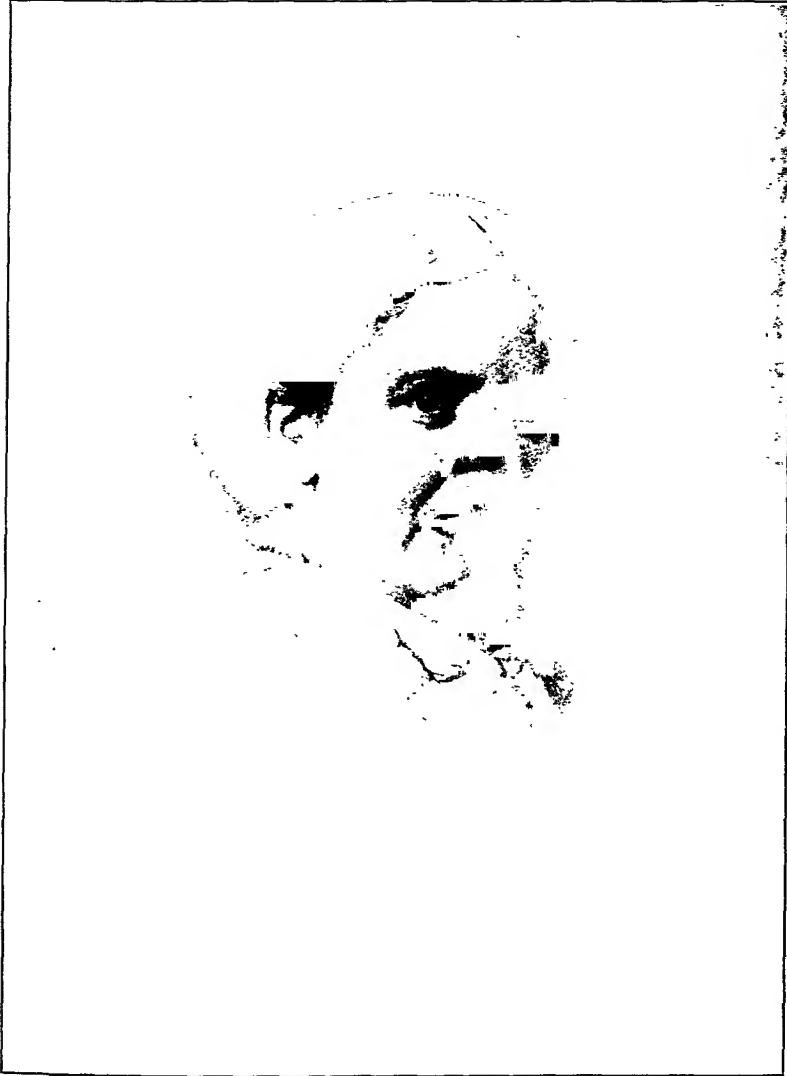
foregone conclusion that the Eskimo pottery area is geographically disconnected from the southern area. That the present Athabaskan tribes north of the Sarcee (aside from Alaskan peoples close to the Eskimo) know or seem to know nothing of pottery proves little. Archaeological findings as to the distribution of pottery in northern Algonkian areas are not corroborated by anything that we can learn from such tribes as the Malecite or Cree or Saulteaux of today or that we could have learned from some of them even a hundred years ago. Pottery may have lingered longer among the Sarcee because they early gave up the use of bark vessels. It is not exactly likely that pottery will turn up anywhere in the caribou area, but the possibility should not be too summarily dismissed. Few would have ventured to surmise fifteen years ago that pottery would be found in the region of Coronation Gulf.

Linguistic evidence is not clear in such a case as this because the name of a type of utensil of one material may be readily carried over to an equivalent utensil of another material. There is a widespread Athabaskan term for "pot, kettle": **ons'a'*, **as'a'*. For Anvik Ten'a (lower Yukon) Chapman gives *e'ço*, *eço'xû*, *e'çok* "pot" (properly "clay pot," according to personal information obtained from Thomas B. Reed, a young Indian from Anvik); Petitot renders "marmite" (i.e. "kettle") *onša* in Carrier, *onsha* in Sekanais, *onšwa* in Hare, and *onša* in Montagnard; Goddard gives *ūsa'* for "pail" in Beaver; I have recorded *as·q'* (*a* is high-pitched, velarized *q* is low-pitched) for "pot," specifically "clay pot," in Sarcee; and the Franciscan Fathers give *ā'sā'* in Navaho for "pot" and "native pottery." The term is apparently absent in Pacific Athabaskan. Presumably the Athabaskan term originally referred to a pail-like or kettle-like receptacle of bark, only secondarily to one of clay. And yet can we be sure that its primary meaning was not "clay pot"? If it was, we could understand why it was lost in the Pacific dialects, for a term for clay cooking vessel would not be readily used for one of twined basketry, while a term for bark vessel conceivably might be. Admittedly, however, this is a tenuous argument.

ALICE CUNNINGHAM FLETCHER

A LONG life devoted to work in which the interest is absorbing and unflagging was that lived by Miss Fletcher. It is not often that the fortunate agreement of circumstances admits of anything so near the ideal.

Miss Fletcher was born March 15, 1838, during a temporary sojourn of her parents in the island of Cuba. Part of her early adult life was spent in European travel. She witnessed the famous Passion Play at Ober-Ammergau and afterward lectured upon it before New York audiences. We first hear of Miss Fletcher's activities in the cause of the American Indian when some time before 1880 she originated the system of loaning small sums of money to aid Indians to buy land and build houses for themselves. It is difficult now, since her contemporaries are gone, to designate the influence which led Miss Fletcher to become one of our greatest students of the Indian. She became interested in the work of the Peabody Museum of Archaeology and Ethnology, at Cambridge, Mass., in 1881 or 1882, and for several years carried on investigations among the Sioux, Omaha, Winnebago, and Pawnee, some of the results of which were published in its reports. She also brought together certain ethnological collections for the Museum from these tribes, including the objects belonging to the sacred tent of war of the Omaha. About this time, or a little earlier, probably under the inspiration of Prof. F. W. Putnam, she read extensively on archaeological subjects and lectured frequently on general archaeology. She rendered valuable assistance to Prof. Putnam in securing funds for the purchase and preservation of the Serpent Mound of Adams County, Ohio. Her name first appears as an "Assistant" on the published list of officers and assistants of the Peabody Museum in 1886, although she had been active in its interests for four years before that time. Her work among the Indians attracted the attention of Mrs. Mary C. Thaw of Pittsburgh, and through Mrs. Thaw's initiative and Prof. Putnam's



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interest, the Mary Copley Thaw Fellowship was founded in 1891 in connection with the Peabody Museum, for the special benefit of Miss Fletcher, that she might be free to devote the remainder of her life to her work among the Indians. This fellowship was held by Miss Fletcher up to the time of her death.

Miss Fletcher was instrumental in securing land in severalty for the Omaha Indians and was appointed a special agent to carry out the work of allotment, in April, 1883. She completed this in June, 1884, and between July, 1887, and April, 1889, performed a similar service for the Winnebago. Immediately afterward she was given charge of allotment among the Nez Percé and this absorbed her attention until 1893.

While among the Indians Miss Fletcher suffered a severe attack of inflammatory rheumatism due to overwork the after effects of which rendered her a cripple for life. She told the writer that for many weeks she was compelled to lie in bed and that the Indians, admirably solicitous for her welfare and knowing how lonesome she must be, came every day and sang to her. With a memory which excites our wonder though commonplace to an Indian, Miss Fletcher remembered all of these songs and when she recovered was able to write them down. So, no doubt, began her interest in Indian music, of which subject she was the pioneer. Her paper on Indian music at the International Anthropological Congress in Chicago in 1893 inaugurated the work in this interesting branch of investigation, which bids fair to enrich the music of the world. There is now evidence that Indian songs are furnishing more and more inspiration to American composers. Some time in the nineties of last century Miss Fletcher recorded the Hako ceremony of the Pawnee Indians which she had first observed in the early eighties. This remarkable production, which evidences the closest study of creed, cult, and ritual, including the many songs of the ritual, is the first complete record of a Plains Indian ceremony and stands unrivalled by any which have succeeded it. Here for the first time did any observer step behind the veil into the esoteric mysteries of an Indian ceremony and record those beliefs which are the most difficult to collect from the ultra-conservative old men who know.

Miss Fletcher's work among the Omaha was one of the chief labors of her life. The Omaha, one can gather, became first in her thoughts and affections. Together with her adopted son, Francis La Flesche, the monumental work on the Omaha, comprising the Twenty-seventh Annual Report of the Bureau of American Ethnology, was produced, the result of many years of research. Anthropological science is to be congratulated that this study of the Omaha could be completed by those who had seen the tribe in practically its earlier condition and followed it down to the stage of progress it has reached today.

Miss Fletcher received numerous well-deserved honors. She was Vice-President of the American Association for the Advancement of Science in 1896, President of the Anthropological Society of Washington in 1903, President of the American Folk-lore Society in 1905. In these organizations she was a faithful attendant and active worker until within a few years of her death, which occurred at her home in Washington, April 6, 1923.

It is not necessary to analyze the character of Miss Fletcher's writings, but it is obvious that she made unusually important contributions to our knowledge of the inner spirit and beauty of the Indian's concepts. She placed the Indian on a higher plane than that to which less critical observers assigned him. Her collection of data was expedited by the simplicity of her dealings with the Indians and her entire sympathy with them. She was a friend among friends, and all her inquiries were answered freely and with confidence as one of the family. Such conditions are not often granted to anthropological investigators and for this reason much information on various lines of Indian life is irreparably lost; the essence of the matter, one would say, is not appreciated and is thought to be non-existent. As an interpreter of the Indian Miss Fletcher ranks among the highest.

To those who knew Miss Fletcher her success with the Indian needed no explanation; her methods were the outgrowth of her character. Mildly, peaceably, yet with great fortitude, she did what she could to advance the cause of science and science is her debtor.

The accompanying likeness of Miss Fletcher is from a crayon drawing made by E. H. Miller of Washington, D. C., in 1888, which is now in the possession of the Peabody Museum.

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WALTER HOUGH

BOOK REVIEWS

METHODS AND PRINCIPLES

The Population Problem: A Study in Human Evolution, A. M. CARR-SAUNDERS. Oxford: Clarendon Press, 1922. 516 pp.

This book by A. M. Carr-Saunders, lecturer in the natural sciences at Magdalen College, Oxford, is a serious scholarly treatise. It is a volume of some two hundred thousand words, and several years must have been used in its immediate preparation. A certain maturity of reflection and detachment from impulse, however, are evidence of a longer period of study.

The sub-title, "A Study in Human Evolution," is needed to give an indication of the nature of the contents. Only one scant chapter is given to modern population problems as frequently discussed in connection with war, wages, immigration, social classes, falling birth rate, and birth control. The book is really a study of a phase of social evolution. The range extends from the ice ages and earlier, through the various primitive cultures, through the early historical period and the medieval period, down to present times. The scope probably indicates why there is almost a minimum of statistics in the author's methodology.

The population problem is treated in the two aspects of quantity and quality.

The quantity problem turns on the ratio of numbers to the volume of economic goods or the food supply, and is thus treated in the general setting laid out by Malthus, though the treatment is by no means cast in the same mold. On the perennial discussion as to whether Malthus was right or wrong, the author holds that "the theory of Malthus has long been disproved." We need not here open up this discussion, nor is this the place for dogmatic statements by the reviewer; suffice it to say that the author's views are much like those of the economist Edwin Canaan and that he thinks Malthus particularly in error regarding the rate of increase of the food supply. Furthermore, whereas Malthus made the ratios fluctuate around the point of subsistence, to the author the point of the optimum number is much more relevant. Indeed, this idea of the optimum number is

in a way the center of a sort of hypothesis running through the author's discussion of quantity.

The concept, the optimum number, seems to have had its origin in discussions of economists concerning the economic law of diminishing returns. The law of diminishing returns of economic literature has the idea of proportionality. Labor may be so scarce in relation to land and capital that each increment of labor added means an increasing return per unit added, but a point, an optimum, will be reached beyond which the return will be diminishing. This optimum gives the greatest return per head. Most of the author's discussion of quantity is to show how frequently peoples in all cultures regulate their numbers, and to inquire with what success this regulation attains a satisfactory approximation to the optimum.

There are chapters of evidence showing that great numbers of primitive peoples do regulate their numbers by customs or practices of abortion, infanticide, abstention from sexual intercourse, and otherwise, in addition to the influence of general mortality. These more or less purposive regulatory practices are seen to be of much importance in keeping the numbers down. In fact, the reader gets the impression that in the primitive cultures the peoples were highly intelligent and successful in restricting their numbers by these regulatory practices. For instance:

" . . . taking into account the fact that wherever social cooperation exists there must be within any area a certain desirable density of population—the optimum number—it has been argued that there will come about an approximation to this number owing to the practice of certain habits and customs restrictive of increase. (p. 292.)

A doubt rises in the mind of the reader, however, as to whether the death rate and particularly the natural infantile death rate may not have been the more important and successful factor in restricting the numbers. The high infantile death rate is discussed and recognized, but the regulatory practices seem to be stressed more.

It is very hard to say whether the equilibrium between the population in primitive cultures and the food supply was reached more largely by automatic natural processes or by purposeful group-practices. The author gives for evidence the observations from an extensive literature of ethnological writings. These observations, of course, do not appear in the form of statistics of birth and death rates.

Omitting as impractical the securing of any census of birth and death rates by ages and causes, it is, however, possible that somewhat more light might have been thrown on the subject by devoting a few chapters to an intensive study of some particular primitive group or groups; for with such selected favorable illustrations a better approximation could be had to the effective frequency of these regulatory practices as compared to natural death. For instance, among the Eskimo the number of still-births and the chances of death are great, while infanticide is relatively infrequent. Still, of course, the regulatory practices may be a narrow but nevertheless important margin between starvation and a satisfactory standard of living.

The author also argues that the ratios among primitive peoples do not indicate a pressure for bare subsistence as Malthus would have it, but rather that the primitive peoples have somewhat purposively attained approximately to the optimum, that is, the best ratio of number to food supply. This difference between the optimum and the bare subsistence level seems to the reviewer to involve such possibly nice distinctions that they can hardly be told without measurement.

The main evidence of the author on this point is the general unanimity of opinion as to the splendid physical development of natives. He also remarks (p. 293):

The question as to how far these practices are effective in bringing about an approximation to the desirable number is not easily answered. . . . But putting aside the fact that the evidence, such as it is, does suggest an approximation, it may be observed that conditions were such as to render an approximation easy. Skill increased so slowly that for long periods of time the desirable number remained about the same; the factors of elimination, such as war and disease, were not erratic in their action; social organization was not complex in the economic sense and therefore the danger of breakdowns followed by changes in the desirable number was absent. Thus we may conclude that, in all probability, in primitive society an approximation was normally attained.

It is possible that the application of the Malthusian concept of ratios to certain cultures at the hunting level is, in a way, somewhat artificial. This concept as applied to the late historical period means a more or less slow deterioration or amelioration in the standard of living due to changes in the numbers or in the supply of economic goods. Among the hunting cultures there is much less chance of so slow and so wide a possible variation in the economic goods on account of the limited accumulation. The margin between the optimum and subsistence is not so great. In addition, the food supply (in the

absence of food storage, of domestication of animals, and of a development of agriculture) may frequently have been quite irregular by seasons of the year and by years. At certain short intervals a hunting or food-gathering group would be decidedly at what Malthus would call the bare subsistence level, while at other times there would be plenty. If such periods of acute distress, occurring at short intervals, resulted in diminishing the numbers at these times, such a checking of population would mean of course a good standard of living at other times. Under such conditions, should we say that the peoples are under-populated or over-populated, that the pressure of population keeps them at a bare subsistence level, or that they have attained an approximation to the optimum? On several occasions within a generation there may be barely a subsistence; at other times, and possibly partly because of the periods of distress, there may be plenty. Possibly more light would have been thrown on the author's thesis by further considerations of the economic life in the hunting cultures, which is somewhat neglected in his treatment.

The discussion of quality of population contains several agreeable surprises. Here is a book on population that does not extol eugenics to the skies, that presents a rather clear idea of culture and an excellent appreciation of the influence of the social heritage in contrast to race in producing achievement and development. The quality of the population is recognized as being a different thing from the quality of culture. It is recognized that tradition overlays instincts, and the progressive qualities of our civilization are not laid to germinal changes.

On the other hand, those who think that germinal change will effect the evolution of society and mould the course of history are upon the whole mistaken. The course of history is in the main dependent upon changes in tradition which are for the most part independent of germinal change. (p. 482.)

Although the author is surprisingly free from the biological cult of race as compared to the usual writer on biology and population, still his estimate of the cultural influence is probably not quite so great as that held by American ethnologists. He thinks, for instance, that germinal differences between racial types must be partly responsible for cultural differences in Europe. He says:

. . . seems to indicate . . . that the adoption of the Protestant religion by the Nordic type was influenced by certain innate characters attaching to this type—self-assertiveness and love of independence, for instance. (p. 449.)

The theoretical basis for his slightly intermediate position is partly in his lesser appreciation of the various cultural influences and partly in his emphasis, on the biological side, of selection instead of mutation.

Throughout the book the author pushes his thesis into various by-ways which illuminate issues and enrich our understanding. Only two such excursions will be mentioned. One is the treatment of the regulation of population in medieval Europe, which was in part accomplished by the postponement of marriage through the medium of the land holdings in rural districts, and in the towns and cities by the apprenticeship and journeymen rules. Another interesting side issue is his refutation of the prevalent doctrine that migrations and wanderings of peoples (and war) are due to the pressure of over-population. With this argument the reviewer heartily agrees.

WILLIAM F. OGBURN

The Evolution of Man. A series of Lectures Delivered before the Yale Chapter of the Sigma Xi during the Academic Year 1921-1922 by R. S. LULL, H. B. FERRIS, G. H. PARKER, J. R. ANGELL, A. G. KELLER, E. G. CONKLIN. New Haven: Yale University Press, 1922. Pp. x, 202.

Books of the symposium type are generally disappointing. They represent at best but a collection of essays. Their intention is to do justice to the several aspects of a subject by a dissemination of forces. The result, too often, is to make us aware of inequalities of treatment. The present volume is no exception to the rule.

The first two lectures will cheer the heart of anyone who has had to expound anthropology before student classes. "The Antiquity of Man" by R. S. Lull has great elegance in its sobriety, while attention must be called to the well-chosen cuts, diagrams, tables and maps with which the lecture is illustrated. For keenness of point-of-view, verve of presentation and a certain dash of style which at times reminds one of Huxley the essay on "The Natural History of Man" by H. B. Ferris is unmatched in the book. Thence we must follow G. H. Parker through a summary exposition of "The Evolution of the Nervous System," at the goal of which we are invited by J. R. Angell to contemplate again with him certain familiar vistas of "The Evolution of Intelligence." Immediately Professor Keller enlists our attention on behalf of "Societal Evolution." The series terminates on the blare of the tubae to the accompaniment of which

E. G. Conklin celebrates not only the immediate, but the distant, future of Evolution.

None of the present essays contains data of original value to the subject treated, but they all represent definite efforts at formulation with a view to interesting more than the cognoscenti and from that angle deserve credit as, in some cases, achievements of no mean value. Mr. Keller's contribution, however, is most likely to arouse special interest. He begins by denouncing the shallow adaptations of Darwinism to the study of society which were in vogue twenty years ago. Then he proceeds himself to "try out the Darwinian principal factors upon societal phenomena." Undoubtedly, he has warned you that he means but an analogy, but all the time, in spite of the words of caution he utters, you feel that he is sailing dangerously near the line where an innocuous analogy becomes transformed into a positive relation of cause and effect. This feeling of insecurity is never quite dispelled as we go on. Mr. Keller uses the word adjustment with a *bravura* that almost takes our breath away. Slavery in America was an adjustment; it ceased to be one after the Civil War. Not exactly; Mr. Keller nicely observes, "Now it has come to be regarded as a maladjustment." "Meeting the conditions of life" is another expression which Mr. Keller is prone to parade as loosely as the word "nature" was used in the philosophico-sentimental jargon of the 18th century. However, he remembers betimes Boas's caution that "the influence of environment can become active in the case of man only when exerted upon the mind of man." Mr. Keller aptly defines the brain of man as a special adjustor capable of being turned upon this or that situation.

It becomes difficult to follow Mr. Keller when in his vein of analogy he says, for instance, that to society mores are what "density and color of fur are to arctic animals; namely automatic adaptations to environment. Life conditions are present and society has to live under them." The word adjustment is admirable, but it leads too easily to explain the result in terms of itself. If we do not beware we shall be tautologizing. Success is adjustment; adjustment is success. Adjustment succeeds because success is adjustment. Let us not suggest a *virtus adjustiva*. Adjustment, in short, is a word that explains nothing and as such is useless, the sham of a concept. It may look scientific enough, but it is as devilishly unintellectual, in its way, as a host of fanciful expressions that make our language beautiful and infest it at the same time, a survival of the time when the world

was conceived in terms of externalized personality, a monument of magic. Its seductiveness should never deter us from looking into the means by which the result it describes is achieved.

Mr. Keller observes elsewhere that societal fitness is not identical with physical fitness. Natural selection, indeed, cannot exceed the organic. The organic is not the last word in society. Human adjustment is mental and independent of environmental conditions. More, it is social, nay, societal, emphasizes Mr. Keller. If one means by societal that men in society do what no man in isolation would think of doing, well and good. Psychology does not explain the all of culture. But when Mr. Keller tells us that society is a force in the same way as gravitation or the expansive power of steam, we shake our heads and refuse to listen to such naïve mysticism.

It would be perhaps overcritical to quarrel with Mr. Lull for stating that polished stone is the distinctive characteristic of Neolithic implements. We have, on the contrary, in the Early Neolithic a remarkable development of the art of surface chipping, the triumph, so to speak, of a technique already in evidence in the Upper Palaeolithic. The polished stone axe which long stood for the symbol of the Neolithic appears only about 4000 B.C. If we are to look for criteria of the Early Neolithic, pottery and the bow and arrow loom very much larger at the outset than ground stone implements.

To sum up, this is a book dealing especially in summaries, to which the attention of the students in our universities ought to be called. It abounds in general views expressed, however, with varying degrees of the incisiveness and concentration necessary in a presentation of that kind. Here is a chance for the artist in the scientific investigator to show what he can do. A hundred pages may have to be reduced to a paragraph. Ideas which otherwise would remain in the proud isolation of their bound volumes are made to jostle elbows. They get acquainted. The reader is almost compelled into philosophy as he gets through the book.

P. L. FAYE

Social Change: with Respect to Culture and Original Nature. WILLIAM FIELDING OGBURN. New York: Huebsch, 1922. viii, 365 pp.

Ogburn's *Social Change* is to the anthropologist like meeting a fellow countryman in a strange land. It comes from a sociologist, is ultimately directed toward application to present-day social and economic problems, but starts with a point of view and operates

throughout with mechanisms that the anthropologist has reason to feel are as yet too largely restricted to himself instead of forming part of the tool chest of general science. Ogburn sees culture as something distinctive: not indeed as a self-sufficient or mystical entity, but as an aspect of a great mass of phenomena which can be understood only by knowledge of its distinctive processes. Sociologists in general have been social psychologists, not students of social products or the causes of these products. They have investigated societies, not the social heritages whose existence they recognized and then felt little further interest in. Ogburn is interested in heritages or civilizational aspects and attempts to penetrate to their causality.

Part I distinguishes the social heritage from the biological elements, and cultural from psychological factors. Part II examines social change: the cumulative nature and diversification of culture, inventions, the rate of cultural growth, the limited correlation of cultural and biological change. Part III is devoted to inertia and conservatism, both in their cultural and their mental aspects. Part IV, on social maladjustments, develops and documents an interesting theory of "cultural lag" as between different parts of a civilization. Part V, on adjustment between nature and culture, is the nearest to "applied" sociology, but temperate, cautious, unpropagandist.

The book grapples with fundamentals, is thoroughly critical in spirit, and promises to mark a milestone in the progress of sociology into a genuine science.

A. L. KROEBER

AMERICA

American Indian Life. By several of its students. Edited by ELSIE CLEWS PARSONS: illustrated by C. GRANT LAFARGE. New York: B. W. Huebsch, 1922. \$10.00.

What have American anthropologists to fear from a British reviewer? Nothing, if they stick to their science and to their chosen subject, the American Indian. If, however, they would be artists as well, the case is altered. For artists are notoriously thin-skinned, and every cat-call from the gallery is felt behind the footlights. Seeing, then, that, when a lady has piped to them, the doctors have not refused to dance, this might seem a grand chance to fling a friendly gibe across the Atlantic. But no gibe will be flung.

For the artistry here cannot be dissociated from the science. The two support and justify each other. Incidental, perhaps, is the

handsome appearance of the volume, and, in particular, the wealth of illustrations not less beautiful in themselves than appropriate in their symbolism. But strictly germane to the scientific purpose is the resolve to be not only anthropological but, so to say, anthropographic as well. By composing the biography of representative individuals social history can be brought to a head. Massive apprehension takes the place of analysis, and the mind, fortified by a preperception of the whole, is not bewildered by the innumerable particulars but is led to select among them such as are essential. For there is a wholeness in the individual life, at any rate when viewed from within, that belongs to nothing else, not even to the social organism considered in abstraction from the beings that commune in and through it. If each of us were not a microcosm, the macrocosm were either chaos or nothing at all. The cream of all our autobiographies would amount to a complete philosophy of life. Meanwhile, the mere biographer, practising the difficult art of introjection, acts as our mouthpiece, and succeeds in his task just in so far as we speak through him, not he through us. Many biographers of the noble savage have used him but as an outlet for their own subconscious longing for the field—for a life falsely conceived as one of unhampered impulse. But the anthropologist knows better than to represent primitive existence as devoid of repressions. On the contrary, the civilized man finds it very hard to enter into the soul-life of the savage just because it is so stiff with *tabus*, so well schooled to ascribe the social system to the gods and free thought to the devil.

In a way, then, savagery lends itself to the method of introjective biography. One is better qualified to stand for all, when all tend to feel and think alike. The only danger is lest we forget that the orthodox too have their feelings and thoughts. The modern "intellectual" so-called, that chartered libertine of the speculative sphere, may well come to regard his conventional brother as a sort of tailor's block, a lay figure on which the external forms of social intercourse are hung in order to show them off. More especially when the conventions are those of another society, and thus seem more or less odd and meaningless to us, will it be difficult to credit the *mannequin* with a will to wear such trappings. Nevertheless, the biographers of a typical savage must somehow make us realize that, conventional as he is, he has a spiritual need to be so; moreover, that only by reason of a severe self-discipline has he made himself what he is. Now these stories ring true just because the authors have insight into the stern-

ness of the training of which the outcome is the character of the American Indian as exhibited over the whole continent from Yucatan to the Arctic. Most of the sketches try to deal with the tribesman as he was before his culture degenerated through contact with the Whites. This is sound method, because anthropology is concerned with types, and a broken man, from any standpoint except that of pathology, has ceased to be a type. The American Indian, it is true, even in his decay preserved something of his characteristic dignity; he is a sick eagle. But any study of him that is to have type-value must conceive him as he was, with his native institutions persisting in all their pristine vigor. Thus considered he appears as the embodiment of an ideal of fortitude. Perhaps a certain temperamental impassivity underlay his pose of stoicism; but in the main it was a product of the social consciousness, an acquired asceticism, a savage sportsmanship self-taught and self-imposed, an organized cultivation by hunters of the hunting temper. Nowhere in the primitive world is the wild man's wildmanliness seen to greater advantage. Oddly enough, one finds it harder to admire him when, as in the South, he has passed on from savagery into barbarism, for, yielding to an obsession to which all cultures of middle grade seem liable, he now confounds self-sacrifice with self-torture, and tries to purify his soul by immersing his body in a blood-bath.

Enough of generalities. One might venture in conclusion to say a word about the merits of particular contributions. The editor gives the field an excellent lead. If one had any fault to find with her style of presentation, it would be that she is at times a trifle didactic. But perhaps it is an old-fashioned prejudice to prefer a play that lacks a preface. To Dr. Lowie unstinted praise must be awarded. He can transmute fact into fancy very prettily. Professor Boas, again, has a sure touch and achieves a convincing picture in a few strokes. Witness, for instance, No-tongue, adrift on a floe, but keeping up his courage with a song—

“Aya, I am joyful, this is good”

A volume devoted to the psychology of the Eskimo could not tell us more. Then Messrs. Wissler, Swanton, Kroeber, Tozzer . . . but to specify further would be invidious when all have done so well. The whole troupe may file before the curtain without a tremor. There will be no cat-calls. There will be a bouquet for each. And in these days it is something to know that, if anthropology prove

unremunerative, they can one and all make their fortunes by supplying the magazines with high-class fiction.

R. R. MARETT

.1 *Report on the Archeology of Maine.* WARREN K. MOOREHEAD. Andover, Mass., 1922.

This interesting volume treats in some detail the results of some ten years' intensive archaeological exploration and excavation in the state of Maine carried on under direction of that veteran archaeologist, Mr. Moorehead, in behalf of the Department of Archaeology of Phillips Academy at Andover.

The results of this work show that there are at least two distinct types of culture found in the area under consideration, and a number of varieties of sites. The first and perhaps most interesting of the two cultures is that first described by Willoughby in 1898, and named "Red Paint Culture" owing to the large quantities of pigment found in the interments. This is distinctly an early culture, and is characterized by cemeteries in which the skeletons of the dead have almost or entirely disappeared, but the accompanying artifacts are still found in situ. These objects consist of quantities of red paint, bayonet slates, gouges and celts of several types, long notched flint blades, plummets and animal effigies of stone, butterfly and crescent ceremonials, and firestones. The occurrence of these objects in the graves is rather constant, but no pottery or pipes, or many of the other articles common in the Algonkian culture complex, occur. A large number of these sites were located by Mr. Moorehead and his party, and thousands of additional artifacts and data were obtained.

The other culture is that of the northern New England Algonkians, and is characterized by the usual remains so often noted as distinctive of that people. Pottery, shell beads, bone implements, and in the later graves, articles of European provenience were secured.

In addition to the exploration of the rivers which formed the chief highways of the aborigines, much attention was paid to the shellheaps along the coast, some of which must have taken a long time to accumulate. A great series of bone and antler implements, with many ordinary forms of stone, were collected. In addition pottery of archaic pointed bottom type was obtained in the lower and middle layers of these heaps, and, nearer the surface, sherds showing that they were broken from vessels with the characteristic

constricted neck and rim of the eastern Iroquois were found. No doubt these vessels were made by Algonkians of a later period who, like their relatives of coastal New York, had fallen under Iroquois domination.

An account of the famous aboriginal cemetery at Swanton, Vermont, which yielded exceptionally fine artifacts of a type resembling both the highest class of middle Algonkian work and the handicraft of the easternmost extension of Ohio mound-builder culture in New York, is also given. This western trip on the part of Mr. Moorehead and his party was undertaken for the purpose of trying to discover outlying sites of the Red Paint culture, in which their efforts were not successful.

There is much interesting information given in the pages of the little monograph which are devoted to intensive description of certain sites. The material is attractively and logically presented, and the illustrations are abundant and well done.

All in all, this is one of the best of Mr. Moorehead's works on North American archaeology, and is worthy of the careful attention of every student of aboriginal culture in North America. It is satisfactory in every particular, and leaves the reader assured that the work has been done thoroughly and authoritatively.

ALANSON SKINNER

The Chickasaw Nation. JAMES H. MALONE. Louisville, Ky.: John P. Morton and Co., 1922. 512 pp.

The author of this book has approached his subject from the standpoint of the local historian rather than from that of the ethnologist, and his account of Chickasaw culture is designed primarily to furnish the general reader with the background necessary for an understanding of the historic activities of the tribe. Of over five hundred pages, only 88 are devoted to matter of ethnological interest. The author has used the historical method throughout and in the chapter dealing with the origin of the Chickasaw has confined himself to a consideration of their migration legend. Extracts from several versions of the legend are given, but no systematic comparison has been attempted and the author has ignored Gatschet's *Migration Legend of the Creek Indians*, which would have been of value in this connection. Much of the material is drawn from works which are not easily available, and the author quotes from a new version of the legend which he obtained from an educated member of the tribe.

This version seems to differ somewhat from any hitherto published and it is unfortunate that neither it nor any of the other versions is given in full. The accounts of mound building contained in these legends are unusually detailed and will prove of interest to students of the region.

The chapter dealing with the appearance and culture of the Chickasaw is made up almost entirely of extracts from the writings of early visitors to the tribe, and the author is to be commended for the thoroughness with which he has covered the literature of the region. This, coupled with his excellent system of references, makes the chapter of real value to ethnologists. Many of the quotations seem unnecessarily brief and the author's selection of material is not always judicious. Thus in the section entitled "Their Dwelling Houses" he contents himself with the brief statement given by the Gentleman of Elvas and ignores Adair's detailed description. Certain important elements of Chickasaw culture are not mentioned and the author has made no attempt to interpret the matter quoted in the light of modern ethnological knowledge.

The chapters dealing with the wars and treaties of the Chickasaw show much careful research and will prove of interest to students of American history. Much space has been devoted to De Soto's dealings with the tribe and to his probable route through their territory. The author brings to this problem an intimate knowledge of the local terrain and of the old Indian trails and makes out a strong case for his contention that De Soto first reached the Mississippi at the place where Memphis, Tennessee, now stands.

RALPH LINTON

The Indian Tribes of Eastern Peru. WILLIAM CURTIS FARABEE.

Introduction by LOUIS JOHN DE MILHAU. (Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University, Vol. x.) Cambridge, Mass., 1922.

Mr. Louis John de Milhau, patron of the expedition, has supplied several pages of introduction most interestingly written of the history of the inception of the undertaking. Dr. Farabee has, to the mind of the reviewer, cast honor upon Harvard by producing a work which will meet with the approval of all anthropologists because of its compactness and the ease with which students can consult it for data. It is difficult to find in the whole realm of anthropological literature a more satisfactory piece of conscientious work. Dr. Farabee supplies

material from the Arawakan, Panoan, Jivaran, Witotan, Miranhan, and Tupian stocks, and from the Macheyenga, Campa, Piro, Mashco, Conebo, Sipibo, Amahuaca, Tiatinagua, Atsahuaca, and Mabenaro tribes under these stocks. Vocabularies are given and a great deal of data on somatic characters. The final chapter is devoted to the studies on the archaeological remains in the Andes region and the interior of Bolivia. There is a bibliography and excellent index; in short, the publication is up to the high standard of the Peabody Museum.

WALTER HOUGH

AFRICA

The Evolution of Kinship; an African Study (The Frazer Lecture, 1922). E. SIDNEY HARTLAND, LL. D., F. S. A. Oxford University Press, American Branch, 1922. 31 pp. \$0.70.

Dr. Hartland's general views on the priority of maternal descent are known in this country both through his books and one of the *Memoirs* of our Association. In the lecture before us he summarizes them once more with his accustomed lucidity, utilizing the African material available and more particularly Smith and Dale's recent work on the Baila. No cognizance is taken of the general reflections made in recent years on the weakness of any unilinear scheme of social evolution, and it may not be amiss to quote the relevant comments of one of Britain's greatest jurists:

When this evidence about barbarians gets into the hands of men who have been trained in a severe school of history and who have been taught by experience to look upon all the social phenomena as interdependent it begins to prove far less than it used to prove. Each case begins to look very unique and a law which deduces that "mother right" cannot come after "father right," or that "father right" cannot come after "mother right," or which would establish any other similar sequence of "states" begins to look exceedingly improbable. (Frederic William Maitland, *Collected Papers*, III, p. 295.)

Apart from Dr. Hartland's tenacious adherence to his earlier point of view, two statements call for consideration. One is presumably a mere slip of the pen: on p. 7 the author seems to assume that the pastoral condition is in an absolute sense inferior to the horticultural. He cannot seriously believe that the kind of tillage carried on by the Bantu raises them even in a purely material sense above the Kirgiz or, to remain within the African field, above the Wahuma.

The second error can unfortunately not be attributed to oversight, for it is too intimately connected with the author's theories and is repeated (pp. 5, 11). Dr. Hartland still ventures to maintain that all tribes in the lower culture have the classificatory system. This is an utterly misleading statement. Even Morgan might have made Dr. Hartland pause, for while he smuggles the Eskimo terminology into the classificatory category he distinctly points out that in "the greater and most important fundamental characteristics of this system it is wanting," there being but two of the ten indicative features present (*Systems of Consanguinity and Affinity*, p. 277). This non-classificatory nature of the Eskimo system is borne out by all subsequent information, including that embodied in Mr. D. Jenness's report (*The Life of the Copper Eskimo*, 1922, p. 83). But what is true of the Eskimo holds for the Chukchi and Koryak as well, and quite recently we have been authoritatively assured by one familiar with classificatory systems that such a system is not found in the Andaman Islands (A. R. Brown, *The Andaman Islanders*, 1922, p. 53). In the Far West of North America the number of tribes without classificatory nomenclature is legion.

As any one conversant with the history of the subject knows, this matter is not one of technical detail but affects the very core of social theory. Kinship systems, we are told by Morgan and his followers, are so persistent that they remain as survivals of long past social customs. The classificatory system is correlated with the sib (clan) organization, and where it alone occurs, so the argument runs, we may infer the former existence of the sib. What, then, of the non-classificatory systems, we ask in turn, that are coupled not with sibs but with a family organization? By what feat of dialectics can they be squeezed into the Procrustean bed of the time-worn unilinear scheme? They simply will not fit; but it is more ingenuous to admit the cruel fact than to ignore their existence.

ROBERT H. LOWIE

MISCELLANEOUS

Buried Cities. JENNIE HALL. New York: The Macmillan Co., 1922. 171 pp., 48 ills.

In this attractive volume the author has presented for children between the ages of ten and twelve an excellent introduction to the subject of archaeology. The three buried cities of Pompeii, Olympia,

and Mycenae were chosen for discussion. For each of these there is a short story which succeeds in making its inhabitants human and lifelike; and this is followed by a brief but interesting and authentic account of its excavation, and numerous beautiful illustrations of the best-known finds.

The book attains a simplicity that makes it comprehensible to its audience, but at the same time avoids that bane of many modern children's books, an insult to its intelligence.

GLADYS A. REICHARD

SOME NEW PUBLICATIONS

Baudouin, Marcel. *L'extraction dentaire préhistorique de nature culturelle.* Paris, 1923. 19 pp., 8 figs.

Beckwith, Martha Warren, and Roberts, Helen H. *Folk-Games of Jamaica.* (Publications of the Folk-Lore Foundation, no. 1, Vassar College Field-Work in Folk-Lore.) Vassar College: Poughkeepsie. 1922. 82 pp.

Eichhorn, August. *Beiträge zur Kenntnis der Waschambaa III.* (Baessler-Archiv, VII, 1918-1922, pp. 56-98, 63 figs.)

Gamio, Manuel. *El último período cultural de tipo Azteca.* (Ethnos, 1923, I, no. 2, pp. 4-21.)

Jaentsch, E. R. *Die Völkerkunde und der eidetische Tatsachenkreis. Nebst einer Erörterung über Lévy-Bruhl's Psychologie der Naturvölker.* (Zeitschrift für Psychologie, 1922, Bd. 91, Heft 1 & 2, 88-111.)

Klaatsch, Hermann. *The Evolution and Progress of Mankind* (Edited and enlarged by Adolf Heilborn; translated by Joseph McCabe.) New York: Frederick A. Stokes, 1923. 316 pp., 111 illustrations. \$8.50.

Krickeberg, Walter. *Die Totonaken.* (Baessler-Archiv, VII, 1918-1922, pp. 1-55, 25 figs., map.)

Locke, L. Leland. *The Ancient Quipu or Peruvian Knot Record.* The American Museum of Natural History, 1923. 84 pp., frontispiece, 59 pls., 17 figs.; 1 map.

Lundborg, H. *Racial Structure of the Finns of the Northernmost Part of Sweden.* (Hereditas IV, 1923, 125-132.)

Martin, Rudolf. *Der neue Schädel Fund von Rhodesia.* (Mannus, 1922, 141-147.)

de Morgan, J. *Note sur les origines de la métallurgie.* (L'Anthropologie, XXXII, 1923, 487-496.)

Neuville, H. *Signification de l'appendice vermiculaire des primates.* (L'Anthropologie, XXXII, 1923, 409-451.)

Parsons, Elsie Clews. *Die Flucht auf den Baum.* (Zeitschrift für Ethnologie, 1922, 1-29.)

Rivet, P. *Cranes de la région du Tchad.* (Extrait des Documents scientifiques de la Mission Tilho, Paris, 1914, pp. 115-118, 2 pls., 1 table.)

Roberts, Helen H. See Beckwith, Martha Warren.

Smith, Maurice Greer. Anthropology. (The University of Nebraska Science Reports, 1923, reprinted as vol. XI, no. 1 of Publications of the Nebraska Academy of Science, pp. 83-101.)

Sullivan, Louis R. New Light on the Races of Polynesia. (Asia, January, 1923.)

Wissler, Clark. Man and Culture. New York: Thomas Y. Crowell Co., 1923. 364 pp. \$2.75.

DISCUSSION AND CORRESPONDENCE

APPLICATION OF THE ATHAPASKAN TERM NUNG-KAHL

THE term *Nung-kah*^{HL} was introduced into the literature of ethnology by Stephen Powers in 1877, under the spelling *Noan-kakhl*.¹ It was said to be the "*Wailakki*" name for the "*Saiaz*" tribe. My impression is that in this instance Powers's use of "*Wailakki*" was a slip of the pen for "*Wiyot*," members of which tribe have repeatedly given me the word *Si'-az* as their name for a *Wilakke* tribe (or tribes) in the Middle Eel River region. Be this as it may, Powers himself placed the "*Saiaz*"² among the *Wilakke* tribes, and there is no question as to the fact that southern Athapaskans were meant.

Thirty-six years after the publication of the term by Powers it was revived, under the spelling *Nongall*,³ by Dr. Pliny E. Goddard, who applied it specifically to an Athapaskan tribe of the lower Van Duzen River region, particularly from the neighborhood of Bridgeville northerly to South and Middle Yager Creeks. Goddard understood his informant to give it as the name of a *northern division* of the tribe then commonly called "*Lassik*."

In the course of my field work among the southern Athapaskan tribes of California I have made particular inquiries about this word, and in several cases have had it given me without inquiry on my part. It proves to be a general or blanket name used by themselves for all the southern Athapaskan tribes, from Iaqua and Yager Creek on the north to the northern border of Round Valley on the south, thus including the Athapaskan *Wilakke*.⁴

¹ Tribes of California, p. 124, 1877.

² The term *Siaz* (variously rendered as *Saiaz*, *Siaz*, *Siah*, *Siaw*, *Sian*, and *Siar*) should be eliminated from the nomenclature of ethnology. It is a term loosely used by several tribes of lower Eel River, Humboldt Bay, Redwood Creek, and Lower Trinity regions, to indicate distant and little known people, and usually refers to Athapaskan tribes on the middle part of Eel River and the upper part of Van Duzen River.

³ Am. Anthropologist, vol. 15, no. 4, p. 703, Oct.-Dec., 1913. Also, Goddard quoted by Loud, Pubs. Am. Arch. and Ethn., vol. 14, pp. 255-256, 1918.

⁴ The term *Wilakke*, regardless of spellings, is another ethnologic misfortune. In the northern Sacramento valley region it is applied by the *Nō'm-lak-ke* and other *Wintoan* tribes to the northern *Wintoan* of Sacramento Canyon and McCloud River, while in Round Valley and on the middle part of Eel River and the upper parts of the

Obviously therefore, instead of being restricted to a particular tribe or division, it is a *supertribal* name. The southern Athapaskans say it is the name of their "*Nation*"—covering all their tribes between Round Valley and Iaqua. But they do not include the *Kahto* of Long and Cahto valleys on the west, or the *Hoopah* and *Hwilkut* tribes on the north.

C. HART MERRIAM

ON THE ORIGIN OF THE SO-CALLED DREAM DANCE OF THE CENTRAL ALGONKIANS

THE so-called Dream Dance among the Central Algonkians is well-known, its counterpart, the Religion Dance among the Foxes, is also known though to a much less extent; and its ritualistic origin myth has been given more than once. Among writers on this subject may be mentioned: Barret, S., *Dream Dance of the Chippewa and Menominee Indians of Northern Wisconsin*; Densmore, F., *Chippewa Music*, II, p. 144; Hoffman, W. J., *The Menomini Indians*, pp. 160, 161; Owen, A., *Folk-Lore of the Musquakie Indians*, p. 40 et sq.; Wissler, C., *Shamanistic and Dancing Societies* (apud *Anthrop. Papers Am. M. Nat. Hist.*, vol. XI), p. 862 et sq. However, no serious attempt has been made by these writers to find out if the origin "myth" has a historic foundation, and the exact time when the dance started, and an important source of information on both these points has been overlooked. This is in a work by B. J. G. Armstrong, entitled *Early Life among the Indians* (Ashland, Wis., 1892), Chapter X, p. 156 et sq. Armstrong observed the ceremonies in the spring of 1878, and interviewed the Sioux girl¹ who founded the dance. "She represented herself to be of the Sioux tribe and a member of a band of the tribe that were massacred by Custer's army on the Little Big Horn, about May, 1876, in which all her people were killed except herself; that she saved herself by jumping into the water on the approach of the soldiers and hiding herself by clinging to roots and

Van Duzen and Mad Rivers it is applied by Whites and Indians alike to southern Athapaskan tribes. How a word of *Wintoon* origin (meaning "northern talkers") came to be fastened to tribes of another stock lying wholly west of *Wintoon* territory is not apparent.

¹ The Foxes are not entirely agreed as to whether the prophetess was a Sioux, Potawatomi or Chippewa; the fact remains that several of the songs are recognized as being Sioux songs.—Michelson, information.

bushes of an overhanging tree or upturned root until the slaughter was over and she could make her escape; that she was in the water about twenty hours; that she reached a band of her tribe and told the story. Whether the girl was crazed by the events and her mind shattered by the awful trial and exposure she endured, I do not know but she said that spirits had told her she must teach a new dance and to teach it to all the Indian tribes, etc." In short the ritualistic origin "myth" is substantiated as history.

TRUMAN MICHELSON

BRIEF CONTRIBUTIONS

A NOTE ON KIOWA KINSHIP TERMS AND USAGES¹

WHILE gathering some data on the military societies of the Kiowa at Anadarko, Oklahoma, in June, 1915, I availed myself of the opportunity to record the kinship nomenclature of this tribe. As the total time devoted to the Kiowa was limited to a few days, my notes are of course inadequate and doubtless in part inaccurate, though I tried to check the information so far as possible. The following are the terms secured, together with some relevant information incidentally obtained. My interpreter was Andele Martinez.

<i>Vocative</i>	<i>Meaning</i>	<i>Non-vocative</i>
to'	father, father's brother	to' to'i, nq' toL
qo'	mother, mother's sister	qo' qo' i, nq'tso'
sēqíya	mother's brother, sister's child, father's sister's husband	sēqyaí', nq't' é'i
tsayí'ē	father's sister, mother's brother's wife	tsāyu'i
t'a	father's mother, mother's mother, father's father's sister, mother's father's sister	t'ū tē'
q'ū	father's father, mother's father, grandson (m sp)	q'ū tē'
bōdL	son (m sp.), brother's son (m sp)	bōdLte, nq' i, nōnyi
sē'itan	daughter (m sp), brother's daughter (m.sp)	sē'itan'tē', nq'yieta, nq' ieta ⁽²⁾
pāvi'ō	elder or younger brother (m sp), great-grandson (m sp)	pāviyo'i
-----	son (w sp), sister's son (w.sp)	nq'yi, nq'it ⁽²⁾
--- --	elder or younger brother (w.sp)	nqto'
--- --	brother's son (w sp)	nq'gi
--- --	brother's daughter (w sp)	nq'gieta
--- --	sibling of sex opposite to speaker's (m sp , w.sp.)	nq'tq, q'to' q'o'
--- --	elder or younger sister (w.sp.)	nq p'i'ē, i p'i'eq'q
---- --	wife	nq't'a
--- ---	husband	nq'q'i'ē, i q'i'eq'o
-----	father-in-law (m sp., w sp), son-in-law, (m.sp , w sp.)	nq'dūm, i dūmq'(a)o
--- ---	son's daughter (m sp , w.sp.), mother-in law (m sp., w sp)	nq t'o' ²

¹ Published by permission of the American Museum of Natural History.

² Identical with term for sibling?

A mother always addresses her son or sister's son by name. She *may* use *se'itan* in addressing her daughter but generally uses the proper name. On the other hand, a father *may* call his daughter by name, but preferably uses the kinship term as given.

A grandmother addresses her grandchild by name; non-vocatively she either uses the name or a descriptive term.

A man addresses his wife and her sister by name; non-vocatively he uses this sister-in-law's name but may refer to her jocularly as his wife.

A woman addresses her husband and his brother by name; this brother-in-law is also referred to by name non-vocatively. A widow often marries her husband's brother.

A man addresses his brother's wife by name, using a descriptive designation non-vocatively. A woman calls her sister's husband by name, using a descriptive designation non-vocatively.

Brothers-in-law address each other by name and otherwise define their relationship descriptively.

A woman calls her brother's wife and her husband's sister by name and otherwise uses descriptive designations.

A man never addresses his father-in-law by a specific term, though he may speak to him and if necessary call him by name.

A woman addresses her daughter-in-law by name, while a man does not talk to her at all. Both sexes employ the same non-vocative term for a daughter-in-law. A woman addresses her mother-in-law by name.

All cousins are designated as if they were siblings.

Great-grandchildren (m. sp., w. sp.) are also classed with siblings.

No'am, *no'amlu* were recorded as designations for nephew and niece without further specification.

The foregoing data are remarkable in a number of ways. Probably the most noteworthy feature is the large number of relatives who cannot be addressed by a specific term at all and the correlated extensive use of proper names otherwise so rare among primitive peoples. On the other hand, it will be noted that where both vocative and non-vocative terms occur in the list they generally represent merely differentiations of a single stem.

Another peculiarity is the lack of discrimination between the elder and the younger sibling. This has been noted for the Pawnee by

Morgan,³ whose statement was confirmed by the late Mr. Murie, but it is certainly of extremely rare occurrence in North America. The classification of the great-grandchildren with siblings also recalls a Pawnee feature, though the parallel is merely generic, insofar as the exact generation is ignored by both tribes. According to Morgan, the Pawnee great-grandfather is called uncle and the great-grandson nephew, and the great-great-grandfather is called father;⁴ while notes furnished by Mr. Murie indicate that a man classed his great-grandparents with his father and mother.

The lack of discrimination between cross-cousins and parallel cousins—or, indeed, between cousins and siblings—likewise merits attention. It is shared with the Wind River Shoshoni, hence probably with the Comanche, with whom the Kiowa have been so closely associated. Otherwise I fail to note Shoshonean features except for the reciprocal uncle-nephew term: the highly characteristic differentiation of maternal and paternal grandparents is absent.

Though the last-mentioned characteristic separates the Kiowa terminology from most "classificatory" systems of the Dakota-Iroquois type—or, as Morgan would say, of the Ganowanian family—other traits recall these systems, viz., the designation of parallel uncles and aunts and correlative designation of nephews and nieces.

A glance at Morgan's tables⁵ will demonstrate the importance of the designations of father's sister's husband and mother's brother's wife from a comparative point of view. Hence, it is not obvious in the light of historical relations why the Kiowa should coincide with the Wyandot, Dakota, and most Algonkians in classing the father's sister's husband with the maternal uncle.

At the present stage of our knowledge the Kiowa system offers more problems than it solves. Possibly some reader of this article may find it convenient to check, amplify, and revise my notes and shed some light on puzzling points.

ROBERT H. LOWIE

THE PUNISHMENT OF IMPUDENT CHILDREN AMONG THE KICKAPOO

THE following notes were collected among the "Mexican Kickapoo," of Oklahoma, during the summer of 1922. They were collected

³ I. H. Morgan, *Systems of Consanguinity and Affinity*, p. 197.

⁴ *Ibid.*, p. 196.

⁵ *Ibid.*, pp. 322, 331.

quite incidentally, and fuller data would be desirable on some points. Nevertheless, as there is no published material on the punishment of impudent children among the Kickapoo, it is worth while to publish what is at hand. Furthermore, the data show not only similarity to the practices of neighboring tribes but also some sharp differences.

If a girl is impudent to her father, her father will say nothing to her; he will tell her mother who will blacken the girl's face and make her fast. This might be for a day. Today a girl's mother would whip her.

If a girl is impudent to her paternal uncle, the girl's mother tells the paternal uncle to tie the girl up or duck her in water.

If a girl is impudent to her own mother, the latter can do what she pleases.

If a girl is impudent to her maternal aunt, the latter can do what she pleases.

If a girl is impudent to her maternal uncle, her mother would tell him to tie the girl up or duck her in water.

If a girl is impudent to her paternal aunt, the girl's father would tell his sister to tie her up or duck her in water.

If a girl is impudent to her paternal grandfather, her father will tell his father to do as he pleases. The girl's mother will say nothing.

If a girl is impudent to her paternal grandmother, the girl's father will tell his mother to do whatever she pleases. The girl's mother will say nothing.

If a girl is impudent to her maternal grandfather, the latter will punish the girl as he sees fit.

If a girl is impudent to her maternal grandmother, the latter will punish her as she sees fit. The girl's father or mother will say nothing.

If a boy is impudent to his own father, the latter may punish him as he sees fit; the man's father or his wife can interfere if the man is too severe.

If a boy is impudent to his father's elder brother, the boy's father will tell the latter to do what he pleases.

If a boy is impudent to his father's younger brother, the boy's own father must punish him.

If a boy is impudent to his own mother, his mother can do as she pleases.

If a boy is impudent to his father's younger or elder sister, the boy's father will tell her to duck him in water; sometimes the boy's father will say "Kill him!" simply to frighten the boy.

If a boy is impudent to his mother's younger or elder brother, the boy's mother will say, "Tie him up!" "Throw him in the water!" "Hang him!"

If a boy is impudent to his mother's sister, the boy's mother will punish him.

If a boy is impudent to his paternal grandfather, the latter would not ask permission but would forthwith punish the boy.

If a boy is impudent to his paternal grandmother, his grandmother would proceed to punish the boy as she sees fit. She may or may not tell what she has done.

If a boy is impudent to his maternal grandfather, the latter will do as he pleases.

If a boy is impudent to his maternal grandmother, she will do as she pleases.

In this connection it may be added that a boy or girl can ask the father's or mother's brother for money, etc. If a girl's father dies, her father's brother or aunt (maternal or paternal) will take care of her. Her mother's brother would not. If the paternal uncle takes care of his brother's children, he cannot whip them.

Two of the sharpest contrasts with the Foxes may be mentioned: a girl or boy under no circumstances will be impudent to the maternal uncle (and so too with the Ojibwa of Lac Court d'Oreilles); furthermore they would not ask their maternal uncle for money, etc.

TRUMAN MICHELSON

PROCEEDINGS OF THE CENTRAL SECTION OF THE AMERICAN ANTHROPOLOGICAL ASSOCIATION

The Central Section of the American Anthropological Association held its second annual meeting at the Public Museum of the City of Milwaukee, Milwaukee, Wisconsin, March 2 and 3, 1923.

One meeting of the Executive Committee was held with President Barrett in the chair.

EXECUTIVE COMMITTEE MEETING, MARCH 2, 4:30 P. M.

The following reports were read and accepted:

REPORT OF THE SECRETARY

The proceedings of the first annual meeting of the Central Section of the American Anthropological Association were published in the *American Anthropologist* for April-June, 1922. There have been no special meetings of the Central Section nor of the Executive Committee during the year.

Since the organization of the Central section its membership has steadily increased until at present it is as follows:

Honorary members.....	1
Associate members	5
Regular members	43
	<hr/>
	49

Respectfully submitted,

RALPH LINTON,
Secretary.

REPORT OF THE TREASURER

Receipts

Gift to Central Section A. A. A.....	\$ 50.00
Annual Membership Dues 1922.....	81.00
Reimbursements39
	<hr/>
	\$131.39

Disbursements

Payments to American Anthropological Association	\$65.00
Colonial Press.....	21.25
Milwaukee Museum Press.....	9.25
Secretary-Treasurer's Expenses	3.00
	<hr/>
Total Disbursements	\$98.50
Cash on hand	\$32.89

Respectfully submitted,

RALPH LINTON,
Treasurer.

The accounts of the Treasurer, Ralph Linton, have been examined and found correct.

Signed:

ALANSON SKINNER,
FREDERICK STARR,
Auditing Committee.

The following list of officers was presented by the Nominating Committee:

President: William C. Mills.

Vice-Presidents: Chas. E. Brown and Berthold Laufer.

Secretary-Treasurer: J. A. Mason.

Executive Committee: S. A. Barrett, Alanson Skinner, George R. Fox, L. B. Wolfenson, Ralph Linton.

Council: Frederick Starr, Chas. Owen, A. B. Lewis, Chas. G. Schoewe, E. K. Putnam, Chas. R. Keyes, M. P. Gilmore, A. E. Jenks, Hutton Webster, Milford G. Chandler.

No nomination was made for the office of Corresponding Secretary, the duties of this office to be performed by the Secretary-Treasurer.

ANNUAL MEETING, MARCH 3, 9:30 A. M.

The officers and members of the Council nominated were declared elected by a vote ordered cast by the Secretary.

The following resolutions were offered and passed:

(1) The Central Section of the American Anthropological Association expresses its sincere thanks to the Public Museum of the City of Milwaukee, to its trustees, and to its officers for their liberal hospitality and for many kindnesses received.

(2) The Central Section of the American Anthropological Association expresses its sincere thanks to the retiring officers of the Section for the diligence which they have shown in the performance of their duties and for their many services in connection with the organization and establishment of the section.

(3) The Central Section of the American Anthropological Association expresses its sincere thanks to Mr. Joseph Ringeisen for the facilities afforded its members for the inspection of his collection of American Indian artifacts.

(4) *Whereas*, the past year has witnessed the presentation to Congress of the Bursum Bill, passage of which would have resulted in the loss to the Pueblo Indians of their lands and water rights, and

Whereas, the failure of this bill has been followed by the presentation of the Snyder Bill, which is believed to embody many of the objectionable features of the Bursum Bill, therefore be it

Resolved: that the Central Section of the American Anthropological Association is opposed to any and all measures designed to deprive the Pueblo

Indians of their property or of the rights and privileges which they now enjoy; and be it further

Resolved: that the Secretary be instructed to obtain full information as to the content and present status of the Snyder Bill and to transmit such information to the members of the Executive Committee of the Central Section; and be it further

Resolved: that the Executive Committee of the Central Section be empowered to take such action in regard to this bill as may seem to them necessary to safeguard the interests of the Pueblo Indians.

(5) *Whereas*, certain members of the Central Section of the American Anthropological Association have received from Mr. Warren K. Moorehead circulars entitled "Coöperative Collecting, An Opportunity to Add to Your Collection," and

Whereas, the plan of collecting outlined in this circular appears to the members of the Central Section to be derogatory to the best interests of the science of American archaeology, therefore be it

Resolved: that the Secretary of the Central Section be directed to forward to Mr. Warren K. Moorehead a letter protesting against the plan of collecting as outlined and informing him that the members of the Central Section do not feel that they can lend it either their countenance or support.

A tour of the Public Museum of the City of Milwaukee under the guidance of members of its scientific staff was a feature of the program.

The following papers were presented:

S. A. Barrett, Director of the Public Museum of the City of Milwaukee
Address of Welcome.

Alanson Skinner . . . War Customs of the Sauk Indians.

Milford G. Chandler . Woven Sashes of the Central Algonkins.

Alanson Skinner . . . Material Culture of the Ioway Indians.

Huron H. Smith . . . Ethno-botany of the Menominee Indians.

George R. Fox . . . The Coming of the Amerind.

Charles R. Keyes . . . Grooved Axes of the Keokuk Type.

George A. West . . . Recent Discoveries at Stonehenge.

William C. Mills . . . Excavations in the Mound City Group.

Alanson Skinner . . . Sacred Pipes of the Ioway Indians.

Frederick Starr . . . Ema, Votive Pictures of Japan.

Charles E. Brown . . . The Preservation of Indian Landmarks in Wisconsin.

Alanson Skinner . . . Notes on the Mahikan Indians.

Alanson Skinner . . . The Fundamental Sacred Myth of the Central Algonkins.

G. A. Squier . . . Platform Structures at Trempealeau.

RALPH LINTON,
Secretary.

ANTHROPOLOGICAL NOTES

DR. A. E. JENKS, University of Minnesota, Professor of Anthropology and Director of The Americanization Training Course, has been appointed Chairman of the Division of Anthropology and Psychology of the National Research Council for the year 1923-24. Dr. and Mrs. Jenks will move to Washington September 1st.

During the summer Professor Jenks will give two courses of lectures in the Department of Education in the Summer Session of the University of California (Southern Division) in Los Angeles.

COURSES in anthropology at the University of Washington, which have been given under the department of Sociology, will hereafter be on an independent basis. Research opportunities for students will be stressed, particularly with reference to the easily accessible and unworked field of the Coast Salish and kindred tribes. A small allotment of funds and opportunities for publication have been provided.

Anthropological courses at the University of Washington will be offered by Miss Erna Gunther in the autumn quarter, 1923-24, during the absence of Dr. Leslie Spier.

UNDER the direction and support of Dr. Elsie Clews Parsons, Mr. A. H. Fauset is to spend part of the summer among the Negro communities of Nova Scotia and Cape Breton Island collecting folktales from the groups whose founders were landed in Nova Scotia by the agents of the "underground railway." Individuals among them are reported to have adopted the Scotch Gaelic language through contact with Highland settlers in some of the remote regions of the province.

ON behalf of the Museum of the American Indian (Heye Foundation) Dr. F. G. Speck of the University of Pennsylvania and Mr. A. I. Hallowell, Fellow in Anthropology, will investigate certain areas in the habitat of the Montagnais and Naskapi on the lower St. Lawrence this summer. Mr. Hallowell will later continue his work among the St. Francis Abenaki. Miss Frances St. John, a graduate student

of the University, will spend part of the summer among the Iroquois of New York devising means of psychological tests among the Indians.

MR. HARLAN I. SMITH of the Victoria Memorial Museum, Ottawa, Canada, is continuing his researches this summer at Bella Coola which he has visited each field season since 1920. Mr. Smith plans to film some of the characteristic Indian activities.

DR. J. WALTER FEWKES, Chief of the Bureau of American Ethnology, left Washington on May 23 on a short field excursion and returned June 25. The greater part of his time was spent in the study of archaeological material in the Upper Mimbres Valley, N. M. He examined large collections of pottery made by amateurs, at Pinos Altos, Fort Bayard, Silver City, and Deming. On his outward journey he stopped in Tennessee to view the work being undertaken by Mr. W. E. Myer, Special Archaeologist of the Bureau, on the Great Harpeth Mound group in Cheatham County. Mr. Myer's work extended from the latter part of April until July and proved extremely successful. Mr. J. N. B. Hewitt spent six weeks in May and June among the Iroquois of Ontario and the State of New York, and Mr. La Flesche devoted approximately the same time to work in Oklahoma upon the Osage language. Dr. Truman Michelson left Washington May 22 to study the Algonquian Indians in the southeastern portion of the Labrador Peninsula. Mr. J. P. Harrington resumed field work among the Mission Indians of California early in the same month. His first undertaking has been the excavation, under the joint auspices of the Bureau and the Museum of the American Indian, of the old Santa Barbara Indian rancheria at Burton Mound on the Ambassador Hotel grounds.

DR. ALEŠ HRDLÍČKA left Washington in June on an extended trip through western and central Europe in prosecution of his researches on Early Man.

MR. MATTHEW W. STIRLING, Assistant Curator of Ethnology in the U. S. National Museum, began in June the exploration of an ancient Indian village site at Mobridge, S. D.

A COMMITTEE has been formed in England to commemorate the services of the late Dr. W. H. R. Rivers to anthropology and psychology, which includes Sir Charles Sherrington, President of the Royal Society, Sir Humphry Rolleston, President of the Royal

College of Physicians, Sir James Fraser, Dr. Henry Head, Professor Elliot Smith and Dr. C. S. Myers. The Treasurer is Dr. L. E. Shore, St. John's College, Cambridge, to whom contributions may be sent. It is intended that the proceeds of the fund shall be devoted to the promotion of those sciences in which Dr. Rivers took a special interest, but until the amount and the wishes of the contributors are known no definite decision will be reached.—*Science*.

MR. LOUIS SHOTRIDGE proceeded to Alaska in the spring to engage in ethnological work in the interests of the Museum of the University of Pennsylvania.

DR. CARL GUTHE is conducting archaeological work in the Philippine Islands in the interests of the University of Michigan.

AT the meeting of the Board of National Research Fellowships in the Biological Sciences, held on April 25, 1923, Leslie Spier and M. J. Herskovits were appointed to fellowships in anthropology.

AT the twenty-eighth annual meeting of the Michigan Academy of Sciences, Arts and Letters, held in Ann Arbor March 28-30, 1923, the following program was presented by the Section of Anthropology: "The Physical Culture of the Michigan Indians," by W. B. Hinsdale; "An Archaeological Survey of Berrien County, Michigan," by Geo. R. Fox; "The Human and Associated Animal Remains of the Kentucky Caves," by Arthur M. Miller; "Folk-Lore of Fossils in Greek and Latin," by Eugene S. McCartney; "The Stone Cave Temple of Kyungju, Korea," by W. Carl Rufus; "Food Plants of the Polyne-sians and Their Bearing on Route and Time of Migration," by Forrest B. H. Brown; "The Food Prohibitions and Guardian Spirits of the Exogamous Septs of the Batak," by H. H. Bartlett.

THE Ohio State Archeological Museum has been made the recipient of the entire collection of Dr. G. Frederick Wright, glacial geologist, which has been gathered from all parts of the world. Dr. Wright was president of the Ohio Archeological and Historical Society for 10 years and president emeritus for two years until his death, in 1921.—*Science*.

AT the eleventh annual meeting of the Oklahoma Academy of Science, held in Oklahoma City on Feb. 9 and at the University of Oklahoma, Norman, on Feb. 10, Mr. Albert B. Reagan presented a paper on "The Isleta Indians," and Mr. S. Weidman a paper on "An Example of an Indian Picture Writing in the Wichita Mountains."

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PSYCHOLOGY, ANTHROPOLOGY, AND RACE

By ROBERT H. LOWIE

WHEN scientists ceased to quote farmers' tales about the cleverness of their horses or dogs and devised laboratory experiments for the testing of animal behavior, a new era began to dawn in the history of psychology. Psychologists are laying aside the anecdotal method in the evaluation of individual and racial worth, and every anthropologist will welcome an improvement in technique that promises to shed light on one of the most obscure of his own problems, the question of the interrelationship of empirically observed achievement and innate capacity. Unfortunately the psychologists who are most prominently associated with anthropological applications of their new tool are so ignorant of anthropology that their results are worthless. It may be said on their behalf that they have been misled by anthropologists, that we ourselves have been guilty of spreading erroneous conceptions, but that only makes matters worse. The situation thus justifies an elementary consideration of the points at issue, a review that shall dispel the farrago of bad logic, bad biology, and bad faith that continues to pervade discussion of racial endowment.

ANTHROPOLOGISTS AND HEREDITY

In the first place, it may be well to repudiate some absurd misconceptions, such as the strange notion that certain anthropologists favor an extravagant influence of environmental as contrasted with hereditary factors; and that they teach the absolute equality of all races, nay of all individuals. I do not of course pretend to know the views of all living anthropologists, but I am not acquainted with any colleague who entertains these

doctrines. Professor Boas is commonly mentioned as the champion of such dogmas. When, however, I turn from the garbled account of his conclusions in such works as Mr. Madison Grant's *The Passing of the Great Race* to his own statements, I find nothing to support such misrepresentation. Professor Boas argues for "a strictly limited plasticity" (*zugunsten einer eng begrenzten Plastizität*) under the influence of an altered environment.¹ On the subject of heredity he has this to say:

Although we have seen that environment, particularly domestication, has a far-reaching influence upon the bodily form of the races of man, these influences are of a quite secondary character when compared to the far-reaching influence of heredity. Even granting the greatest possible amount of influence to environment, it is readily seen that all the essential traits of man are due primarily to heredity. . . . I am inclined to believe that the influence of environment is of such a character, that, although the same race may assume a different type when removed from one environment to another, it will revert to its old type when replaced in its old environment.²

Finally his statement as to the comparative mental make-up of Caucasians and Negroes is extremely cautious; he accepts the possibility of differences but is not convinced of such differences as would incapacitate the Negro for the exigencies of modern life.³

Personally, I take great pains to impress upon my students that the innate equality of all races is an unproved dogma, in spite of the fact that all the demonstrations of inequality hitherto attempted are scientifically worthless. Some time ago I formulated my views in the following words:

As to the existence of superior races, I am an agnostic open to conviction. All evolutionists admit that at some point an organic change of fundamental significance occurred. It is *conceivable* that the Bushmen and Negrito, Pygmies and Negroes are organically below the remainder of living human types, and that differences of one sort or another even divide more closely related stocks. But between what is conceivable and what is definitely established there yawns a chasm, and where the scientist has no proof he holds no dogmas, though dispassionately he may frame tentative hypotheses.

This is not a very subtle point, but seems to transcend the comprehension of some writers. One of them has even gone so

¹ F. Boas: *The Mind of Primitive Man*, p. 64; *Kultur und Rasse*, p. 67.

² *The Mind of Primitive Man*, p. 76 f.

³ *Ibid.*, p. 271 f.

far as to accuse me of denying innate *individual* differences, referring his readers to certain articles of mine that were expressly designed to illustrate these differences.

It is an interesting fact that those who most vociferously accuse anthropologists of underestimating heredity as compared with environment are themselves the worst offenders in this regard. How does President Osborn, for example, account for the differences of Cro-Magnon man in the Aurignacian and in the Magdalenian period? By the influence of environment! He writes as follows:

It is probable that in the genial climate of the Riviera these men obtained their finest development; the country was admirably protected from the cold winds of the north, refuges were abundant, and game by no means scarce to judge from the quantity of animal bones found in the caves.⁴

In the reduction of the stature of the woman to 5 feet 1 inch and of the man to 5 feet 3 inches, and in the reduction of the brain capacity to 1,500 c.cm., we may be witnessing the result of exposure to very severe climatic conditions in a race which retained its fine physical and mental characteristics only under the more genial climatic conditions of the south.⁵

This is environmentalism with a vengeance! One wonders why those who so readily account for a difference of 300 c.cm. in brain capacity and of 10 inches in stature by a change in geographical conditions refuse to admit that skulls may become somewhat narrower or wider under the influence of changed conditions. The difference of 10 inches in average height is about twice as great as the difference between the Scotch and the South Italians; it is greater than the difference between Andamanese pygmies and Frenchmen; equivalent to the difference between the Nilotics and the Vedda! What does Dr. Osborn mean? Does he believe that a climatic change effected a change in the germ-plasm tantamount to a heritable mutation? Or is he merely suggesting a "modification" in Baur's sense of the term? Even on the latter assumption, he is pleading for a potency of the environment that far transcends Boas's notion of a "strictly limited plasticity."

Mr. Madison Grant is not less of an environmentalist than his scientific sponsor, but apparently he attributes precisely the

⁴ H. F. Osborn: *Men of the Old Stone Age*, p. 297.

⁵ *Ibid.*, p. 382.

opposite effects to the same climatic conditions. The Nordics, whom in the particular sections of the book I am now quoting from⁶ he is pleased to favor, are said to have developed through isolation and the selection due to the rigors of severe winters, while under "the softening influence of a life of ease and plenty" they succumb.⁷ Genial climate was necessary for the Cro-Magnons, the alleged spiritual forerunners of the Nordics, but a genial climate spells disaster for the Nordics, it seems.

Mr. Grant, however, not merely ascribes considerable influence to the environment when it so pleases him, but also implicitly denies the combined influence of both heredity and environment when the spirit so moves him. It is indeed one of his explicit cardinal doctrines that racial traits are "to all intents and purposes immutable," "fixed and rigid." He furthermore holds that in Sweden "there has been but a single racial type from the beginning" and once he even delivers himself of the statement that "Denmark, Norway and Sweden are purely Nordic."⁸ Now we must recall that according to this author the Nordics evolved and actually flourish in the climatic conditions characteristic of their present habitation. Nevertheless he concludes a paragraph on the Scandinavian countries with this statement: "To-day all three seem to be intellectually anaemic."⁹

As a member of the Society for the Advancement of Scandinavian Study and of the Scandinavian Club of the University of California, I venture to stigmatize this proposition as arrant nonsense. But apart from the crass ignorance it displays of the intellectual life of the peoples lampooned, how is such degeneration intelligible on Mr. Grant's own principles? If the Nordics are by heredity a favored race; if the Scandinavians are pure Nordics; if they "flourish, do their work and raise their families"¹⁰ in precisely the type of habitat they occupy; if racial traits "do

⁶ Corresponding qualifications must always be understood to accompany expositions of this writer's views, which change from chapter to chapter, and sometimes even from paragraph to paragraph.

⁷ Madison Grant: *The Passing of the Great Race*, pp. 38-41, 170 f.

⁸ *Ibid.*, pp. 15, 18, 169, 211.

⁹ *Ibid.*, p. 210.

¹⁰ *Ibid.*, p. 39.

not change during the lifetime of a language or an empire";¹¹ then, by what magical process, neither racial nor environmental, do these purest Nordics degenerate to a status of intellectual anaemia within a few brief centuries? Perhaps Mr. Grant is not, after all, the champion of heredity he professes to be when it suits his convenience.

Before leaving this writer, I will call attention to two sentences in immediate contact with each other in his chapter on "The Expansion of the Nordics." In the first, already quoted, the three Scandinavian countries are described as "purely Nordic." In the second, we are told that in southwestern Norway and in Denmark "there is a substantial number of short, dark round heads of Alpine affinities."¹² Comment is superfluous.

To sum up, it is not the professional anthropologist, but the professional heredity-monger that disregards the influence of heredity *ad libitum*. The anthropologist does not assert that the environment induces far-reaching effects on the germ-plasm: he merely asserts that certain phenomena change independently of the germ-plasm and in this claim he is fully supported by the attitude of Professor Elliot Smith, one of the few scientists with primarily biological orientation who have not disclaimed to try to understand the meaning of culture.¹³

INNATE ABILITY AND CULTURE

In the past, arguments on racial differences have almost always been advanced on the assumption that observed differences in cultural achievement must be the expression of correlated differences in inborn capacity. In one sense no one denies this; everyone would admit that a cat, a dog or a monkey is incapable of producing or sharing in human culture. The point at issue is, whether when the organization adequate to the production of culture, or, let us say, of the culture characteristic of the Upper Palaeolithic was reached, any further cultural advance was conditioned by equivalent changes in inborn equipment. The differences between

¹¹ *Ibid.*, p. 15.

¹² *Ibid.*, p. 211.

¹³ G. Elliot Smith, *Primitive Man* (Proceedings of the British Academy, vii, 1916, pp. 37, 49 f.).

the material culture of, say, the West African Negro or the Shoshoni of Idaho on the one hand and Western civilization on the other are so striking that most writers naïvely assume that they are patent proofs of organic differences, and popular prejudice doubtless rests on the same fallacy.

The argument is fallacious, in spite of its plausibility, for the following reason. When we study the known history of culture, we find great changes *without* any corresponding changes in racial constitution. In 1850 no one dreamt of crediting the Germans or the Japanese people with efficiency. Elizabethan England was very different from the England of Queen Anne's day; and those who talk as though an aversion to discussions of sex were a deep-rooted Anglo-Saxon trait have perhaps slight acquaintance with Fielding and the Restoration dramatists. It is true that Galton asserted a racial cause for the magnificence and the decline of Athenian culture, but his claim is an empty allegation and contradictory to his own interpretation of the Renaissance.

The instances hitherto cited involve, however, relatively slight differences when viewed in broadest perspective. Hence it seems desirable to supplement them by others. It is not merely admitted but contended that the Nordic race has not changed in inborn equipment for several thousand years except in so far as it has been debased by amalgamation with inferior types. Yet the culture of the Nordics has developed extraordinarily within the space of from two to three thousand years. The Cro-Magnons provide an even better illustration. They appeared about, say, 25,000 B.C. and persisted through Magdalenian times, which began about 16,000 B.C.¹⁴ Here we have a race at least originally superior in inborn capacity to any now living, yet in 9,000 years or more they cannot rise above the level of the Stone Age culturally! Nay, the case is still more curious, for it is the *decadent* Cro-Magnons—short and with reduced brain capacity—who achieve the triumphs of Palaeolithic art!

Culture evidently does not vary with race according to any simple formula of functional relationship. This does *not* prove that the Tasmanians or Bushmen or Andamanese had the inborn

¹⁴ H. F. Osborn, *Man of the Old Stone Age*, pp. 18, 201, 351

capacity to develop unaided the civilization of Western Europe. It does prove that the difference of their culture from ours is not necessarily rooted in any innate difference, that the popular argument is wholly inconclusive. We simply do not know whether the evolution of *Homo sapiens* involved all the organic requirements for any type of culture known, or whether certain deficiencies, as yet undefinable, necessarily bar certain varieties of the species from independently attaining such and such a cultural status.

Since, then, the gross comparison of cultural achievement leads nowhere, so far as the determination of innate possibilities goes, let us turn for aid to the psychologist. Here, too, however, certain elementary precautions are prerequisite.

PRELIMINARY CONSIDERATIONS

A comparison of distinct *groups* involves the consideration of both average values and variability. It is entirely conceivable that two groups should coincide in their average mentality but differ in range, so that one may produce far more remarkable individuals in both positive and negative direction than the other. Professor Fischer, for example, suggests that the Caucasian differs from the Negroid in precisely this point, while not excelling him in average intelligence. If this could be established, it would have far-reaching theoretical and practical bearings: it would account for the differences in cultural achievement without assuming that the *average* level of intelligence varies in different cultures; and it would imply that for the ordinary tasks of life the Negroid is as well fitted as the average white.

In connection with the occurrence of extreme positive variations it is well to bear in mind another point forcibly made by Father Wilhelm Schmidt. Extreme deviations from the norm naturally occur with greater frequency in large populations than in communities of several hundred. A class of fifty may have the average stature of the whole student body, but it is not so likely to have as tall members as occur in the total campus population of, say, ten thousand. It is not astonishing, then, that hordes of Andamanese or Australians numbering not over a hundred or two should never have produced the personalities which figure in the history of China, India, and Western countries.

Another caution is of tremendous importance. Since we are interested in establishing the existence or nonexistence of *innate* differences, the influence of training and other noncongenital factors, all of which for convenience' sake we may call environmental, must be eliminated. The light-heartedness, not to say unscrupulousness, of many writers on this point is appalling. Admitting, as they must, that an empirical test cannot eliminate the environmental factor, they decree that certain observed differences are too great to be explained by environmental differences, hence are evidence of hereditary differences. The illegitimacy of this reasoning is apparent as soon as it is couched in clear language. Letting H and E represent hereditary and environmental determinants, respectively, the empirical results may be formulated as follows:

$$H_1 + E_1 = A$$

$$H_2 + E_2 = A \pm m$$

It does not require a profound knowledge of mathematics to see that the difference $\pm m$ proves nothing as to the value of H_1 and H_2 so long as E_1 and E_2 differ by an unknown quantity. This is not academic logic-chopping pure and simple: we are told that Negroes are inferior to Caucasians because in certain tests 79 per cent of the former fell below C as against 25 per cent of Caucasians while only 1 per cent of the Negroes as against 12 per cent of the Caucasians scored above C . This difference, we are told, is too great to be interpreted as the result of educational and other social differences. But New York Negroes practically equal Alabama Whites in the tests! Hence the environmental factor *must* be taken into account, and unless we devise accurate methods for its quantitative determination, let us hold our tongues concerning inborn differences.

RACIAL AND NATIONAL GROUPS

It is a commonplace of modern science that racial and national groups rarely coincide. This has not deterred several prominent psychologists from blandly grouping immigrants into the United States according to their place of origin and then proclaiming that the results of the ensuing group tests are *racial* statistics. This is

the well-nigh incredible procedure of Dr. Robert M. Yerkes in an article on "Testing the Human Mind," contributed to *The Atlantic Monthly* for March, 1923. Dr. Yerkes not only brushes aside in cavalier fashion the educational differences discussed in the preceding paragraphs but cites tests on Italians, Poles, Turks, Greeks, *et al.* as establishing *racial* differences. He also ingeniously suggests that the Mediterranean element accounts for the low scores of recent immigrant groups; that element apparently possesses the miraculous quality of detracting from the Italian average by its presence and from the Polish average by its absence.

I wonder what would be thought of a naturalist who should wish to ascertain the characteristic weight of pure breeds of dogs by averaging an odd assortment of St. Bernards, dachshunds, and bulldogs and comparing the result with a corresponding average for mastiffs, fox terriers, and German police dogs. As a humble exercise in arithmetic the procedure may be justified, but its biological significance would be nil. Yet it would be better than Dr. Yerkes's method, for at least the naturalist would know precisely how many individuals of each breed he had weighed, but when Dr. Yerkes tests "Italians" he does not know how many of them represent each of the relatively pure types whose inborn endowments he is attempting to ascertain.

At this point I must register an emphatic protest against the naïve assumption that because certain individuals in a region in which mixture of types has demonstrably occurred display *physical* features characteristic of type A they are therefore likewise the possessors of the mental traits that are *ex hypothesi* distinctive of the primeval "pure" type A. President Osborn goes further and lays down the proposition that even when one of the most typical traits of the Nordic, blondness, is lacking the individual may still be "three-fourths or seven-eighths Nordic, because it only requires a single dark-eyed ancestor to lend the dark hair and eye color to an otherwise pure Nordic strain."¹⁵ By implication dark hair and eye color will be the only features to dominate and the psychological traits of courage, loyalty, self-sacrifice and idealism innate in the Nordic will remain dominant in miscegenation.

¹⁵ H. F. Osborn in "Preface to Second Edition" of M. Grant, *op. cit.* xi 1.

There is of course not a shred of evidence in support of such a principle of inheritance. One might well despair of modern biology if such slovenly pronunciamientos were not rejected by sane students of the subject. As Doctors East and Jones point out, we must be

very cautious about drawing genetic conclusions in the human race based upon the possession of particular traits, in the absence of proof of a long-continued isolation. . . . Traits originally characteristic of certain peoples because of isolation and the consequent inbreeding have been shifted back and forth, combined and recombined. . . . It is wholly possible, for example, that a tall, blue-eyed, dolichocephalic Frenchman really possesses less of the so-called Nordic factors than a short, dark-eyed round-head.¹⁶

Two other points may well be emphasized in this context. For one thing, the variability of "pure" types is largely unknown; we do not know, for example, how probable it is for a "pure" Alpine to vary so much from the norm of his type as to appear like a typical "pure" Nordic. Secondly, it is about time for writers on European anthropology to realize that things are more complicated than a hasty perusal of Ripley's book, now twenty years old, may indicate. Apart from the Adriatic or Dinaric race recognized by many investigators, we may have other types to consider if Dr. Czekanowski and other anthropologists are correct in their observations in Poland and Russia.¹⁷

PROGRAM

Is it, then, necessary to abandon all hope of progress in this field? By no means: a calm survey of the difficulties merely leads to a formulation that does not by necessity produce absurd and worthless results. We cannot hope to eliminate all disturbing factors, but that is equally true even of such ancient sciences as astronomy. We can at least get rid of certain conditions that are bound to vitiate comparative results.

First of all we must choose a region that is anthropologically well known and which has been demonstrably occupied by more than one racial strain, but in which strains are locally more or less

¹⁶ E. M. East and D. F. Jones. *Inbreeding and Outbreeding*, 1919, p. 250

¹⁷ J. Czekanowski. *Recherches anthropologiques de la Pologne*, *Bulletins et Mémoires, Société d'Anthropologie*, 1920, p. 48 seq

segregated. Without assuming that it is the only country suitable for the purpose, I venture to suggest that Italy provides a very favorable starting-point. The contrast between the North Italian Alpine type and the South Italian Mediterranean type is notorious. While of course minor variations are not lacking in the south, the uniformity of the South Italian population is remarkable.¹⁸ The hair is almost always black; the nasal index for Abruzzi, Campania, Puglie, and Sardinia is 69.77, 69.68, 69.49, and 68.82, respectively; the stature ranges provincially between the narrow limits of 159.9 cm. for Basilicata to 162 cm. for Campania; "mixed brown" pigmentation occurs in at least half of the individuals examined, rising to 62.2 per cent in Calabria and 70.4 per cent in Sardinia. When we consider, on the other hand, such typical North Italians as the Piedmontese and Venetians, we discover that the hair is often, if not almost always, of chestnut color; that the mean height is distinctly greater than among the Mediterraneans—166.3 against 163.7 cm.; that there is an appreciable percentage of individuals with fair pigmentation. In addition there is the marked difference in head form: the Piedmontese with an index of 85.7 and the Venetians with an index of 85 are markedly brachycephalic; the South Italians while, contrary to current statements *not* dolichocephalic at present, are either mesocephalic or merely of moderately brachycephalic character. Nevertheless, when we compare the head form of the several South Italian provinces, the impression of homogeneity so strongly suggested by other physical traits disappears; between the extremes represented by Sardinia with 77.5 and Campania with 82.1 there are intermediate figures, such as 78.4 for Calabria and 80.8 for Basilicata.

These data furnish us with the possibility of sketching a program for psychological investigation. In the first place, it is probably not difficult to minimize the environmental factors: a thousand illiterate peasants from Sardinia will probably not differ notably in their cultural influences from an equal number of

¹⁸ For the following data see V. Giuffrida Ruggeri, *A Sketch of the Anthropology of Italy*, *Journal of the Royal Anthropological Institute of Great Britain and Ireland*, LVIII, 1918, pp. 80-102.

illiterate peasants from Sicily. Secondly, when we find such regional differences in head form within an otherwise uniform population, they can plausibly be accounted for through racial mixture; specifically, the relatively broad-skulled groups are presumably such through the influence of Alpine mixture. The alleged innate mental differences are accordingly amenable to empirical verification or disproof: the Calabrians with an index of 78.4 may be assumed to be more like the Basilicatans (80.8) than like the people from Abruzzi (81.9) and Campania (82.1); the Sicilians (79.6) will be more like the Apulians (79.8) than like the other groups mentioned. I am well aware of the fact that very small differences, possibly derived from small series, may not be significant. It is also obvious that, with the variety of complicating factors, the ideal of quantitative refinement here outlined cannot be realized. Nevertheless, if there is anything in the alleged mental difference of the Alpine and Mediterranean types, the *repeated* comparison of all the otherwise homogeneous Mediterranean groups differing only by a varying degree of Alpine admixture indicated by the cephalic index should constitute a crucial test. In Sardinia, with its excessively dark pigmentation, relatively greatest degree of dolichocephaly among the living (77.5), genuine dolichocephaly (71.53) of cranial material, and maximum trend toward curly hair and prognathism, an especially favorable opportunity presents itself for ascertaining the psychological influence of the Negroid strain that has plausibly been assumed as the factor determining these deviations from the South Italian norm. In the north, the aberrant case of Liguria, where the index of 79.34 stands out in marked contrast with that of the neighboring brachycephalic provinces, corresponding comparative tests seem desirable.

While I have stressed the cephalic index in view of Italian conditions, I should not like to be interpreted as disregarding other physical traits. In Portugal, for example, it may well be that the regional distribution of blondness would provide a better line of cleavage than the character of the head form.

A sane procedure will involve the systematic exploitation of *minimal* differences in conjunction with historical data. The

Danes are known to have had largely the same antecedents as the other Scandinavians but they are about three centimeters shorter and have an index of 80.7 as against 78.5 for Norway. To what extent do they differ in mental make-up from other Scandinavians? In Norway a number of interesting problems arise. In sections of the country where no Lapps are known ever to have existed there is a marked percentage of dark-eyed people.¹⁹ This locally segregated group invites comparison with their typical blue-eyed "Nordic" neighbors. The latter may be compared with those Norwegian groups which have demonstrably intermarried with Lapps. Again, "pure" Lapps, such as those measured by Mantegazza, have an index over 87, while the "Lapps" of Troms, where mixture has occurred, have an index of 84.3, besides differing in other respects. Finally, the Karelian Finns differ appreciably from the Finns proper and might well be psychologically tested in comparison with them.²⁰ If I remember Professor Retzius's statement correctly—his volume is not accessible to me at present—the history of the Walloons imported into Sweden is fairly well known, and certain districts still clearly reveal the infusion of Alpine blood. Here, then, a comparison of Alpine and Nordic mentality may be feasible.

No doubt many readers of this journal can suggest additional problems. When psychologists without bias shall have attacked them and arrived at statistically unexceptionable positive results, i.e., shall have established real innate differences, anthropologists will accept the conclusions regardless of their personal predilections or prejudices. In the meantime it is their duty to denounce the charlatanism so prevalent in this field and to repudiate not biology but the sham biology that invents facts and even biological "laws" to support personal views.

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¹⁹ Halfdan Bryn *Troms Fylkes Antropologi*, Christiania, 1922, p. 19

²⁰ *Ibid.*, pp. 33, 37, 174.

AMERICAN FEATHER-DECORATED MATS

By S. K. LOTHROP

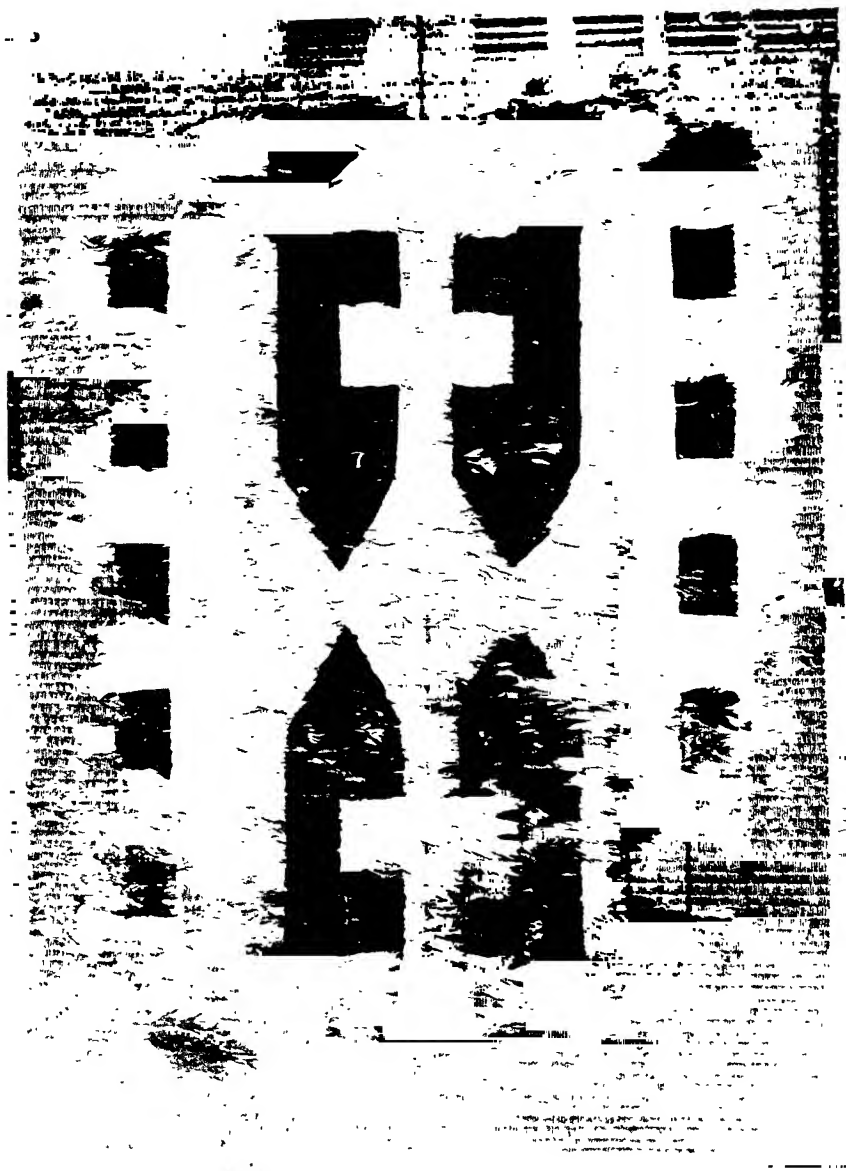
THE use of feathers attached to cloth or some other background in such fashion as to form a pattern is particularly characteristic of the New World. This art flourished, it is true, in certain islands of the Pacific, but scarcely attained the technical and artistic level established on the mainland. The specimens which survive today include remnants of the booty brought back by Spanish conquerors of the sixteenth century and others which have been found under ground in the exceptionally arid environment of parts of Peru. The colorful splendor which greeted the eyes of the Spanish invaders is perhaps most vividly brought home to the present day student by the few known examples of this lost art.

It is the purpose of this paper to discuss certain mats decorated with feathers which are preserved in Rome and Madrid. The Italian specimens are purely aboriginal in character, but those in Spain show European influence in the decorative motives. All these pieces, however, are technically unlike any examples of feather-work which have been published, and, for reasons stated below, it is the belief of the writer that they came from the north-western part of Argentina.

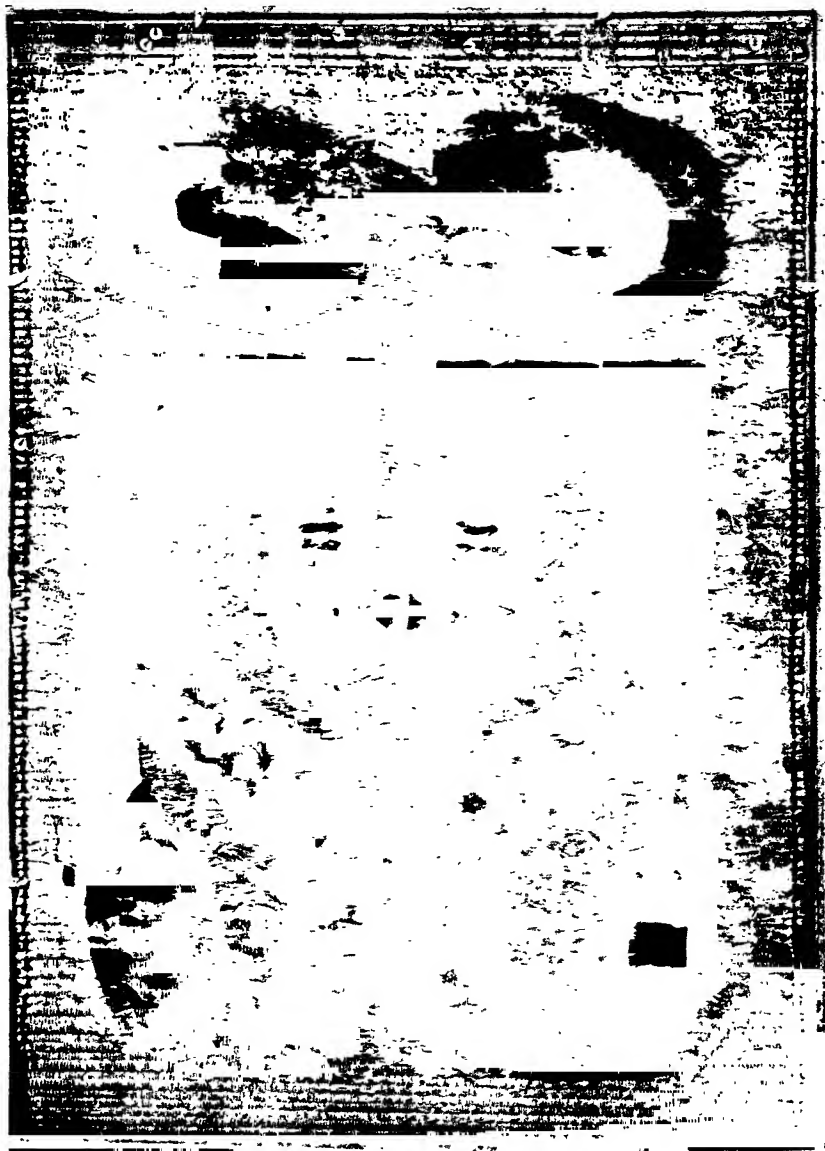
The two specimens in Rome, illustrated in Plates VIII and IX, are housed in the Museo Preistorico ed Etnografico and are said to have come from Mexico. They are part of the Kircheriano collection, formed by the Jesuit priest Athanasius Kircher (1601-1680), and are therefore of considerable antiquity.¹ They consist of mats decorated with patterns worked out in various colored feathers.

The mats themselves are formed of thin slats of wood held together by a weft of white cotton thread. The three marginal strands of the weft are covered with a dark-colored gum which keeps them from slipping off the ends of the slats. At the top

¹ I am indebted to Dr. Ugo Antonielli for permission to photograph these specimens and for such information as is available concerning them.



FEATHER MAT. MUSEO PREISTORICO. ROME



FEATHERED MAT. MUSEO PREISTORICO, ROME

of each mat are four slats which are only partially woven in, but it will be noted that both pieces are complete, for no unravelling has taken place.

The feathers were attached to this base by inserting the end of each plume beneath the threads of the weft. As one feather overlaps another—with an exception to be noted presently—the whole construction is suggestive of shingling. The uneven lines of the pattern at the present time are caused by the fact that where a feather has fallen out one of another color has sometimes been exposed beneath it. Originally, however, the design was sharply defined, for the end of each plume was trimmed square. Along the sides of the mats run bands of large white feathers, now almost entirely destroyed. These feathers are several times the size of those which compose the rest of the field. They are attached by inserting their tops beneath the weft instead of their bases.

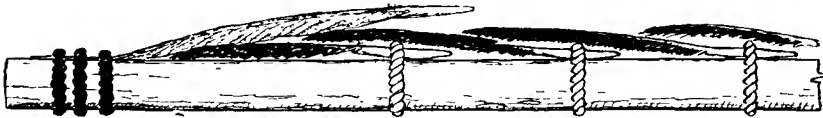


FIG. 49.—Detail of mat showing method of attaching feathers.

On one side of the mat these feathers run in the same direction as the majority but on the other side they lie in a reverse direction (Fig. 49).

The pattern on Pl. VIII consists of two double-headed monsters so curved that the heads face each other, like a letter C. The heads are blue; the bodies are red, white, and blue; the field on which they lie is orange and red. The pattern on Pl. IX has three somewhat similar double-headed monsters each curved like a letter S. The upper figure is black with red and white eyes; the lower pair are red with black and white eyes; the main field is orange with touches of red and blue. Neither of these designs is Mexican in character.

In addition to the feather pattern it will be seen that black lines appear on the sides of each specimen. These have been explained as caused by a glue which keeps the weft from slipping off the slats. In Pl. VIII a single gummed strand runs down the center and additional black lines can be seen under the central

pattern where the feathers have dropped off. These lines are formed of black pigment for the purpose of outlining the pattern before the application of the feathers.

Plate X shows part of a feathered mat which is one of six preserved in the Museo Arqueologico in Madrid. Although the patterns on all the Madrid specimens are obviously European in character the technique of manufacture is similar to that of the Roman examples just described in detail. The Madrid mats are said to have been collected in South America during the eighteenth century, an assertion which throws considerable doubt on the Mexican origin of the mats in Rome. Their place of origin, however, may be surmised through a study of the technique and the patterns employed.

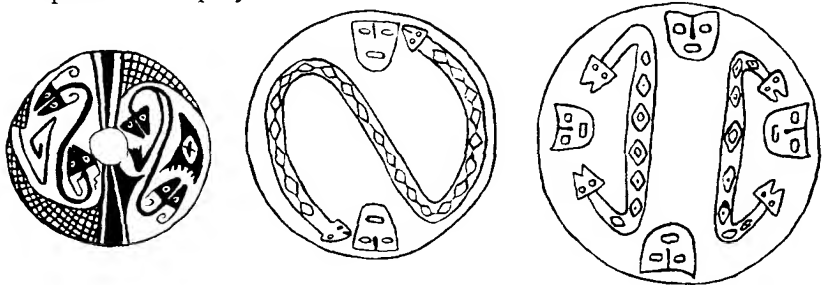
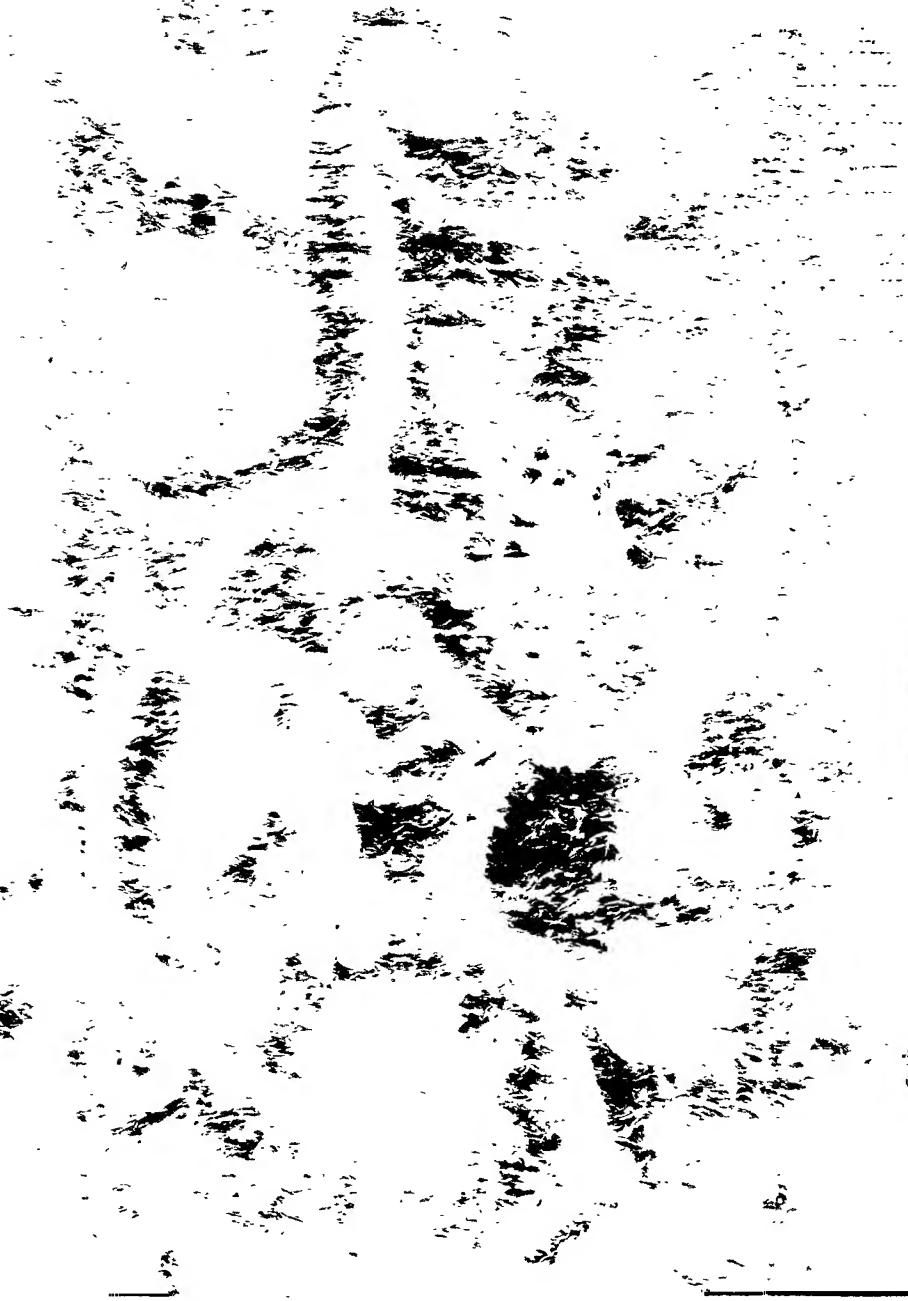


FIG. 50—Decorative motives from northwestern Argentina. *a.* Pottery vessel, Salta Grande; *b.* Metal disk, Pampa Grande; *c.* Metal disk, Andagala. (After Ambrosetti.)

The mats themselves have no close parallel in any Mexican antiquities known to the writer, but similar though undecorated mats have been excavated in Peru.² The patterns on the Roman specimens, however, do not seem to be Peruvian, although they have a vague affinity with certain textile designs from that country. In Fig. 50 we give examples of a two-headed serpent motive from northwestern Argentina. This motive appears to be distinctly related to that on the mats. The culture of this area, usually known as Calchaqui or Diaguite, is local and individual, but exhibits intrusive Peruvian features. It is therefore quite in keeping with other finds that mats of Peruvian type should be decorated with patterns of local origin.

BOSTON, MASS.

² See Baessler: *Ancient Peruvian Art*, figs. 431 and 432.



FEATHERED MAT. MUSEO ARQUEOLOGICO, MADRID

ON A PECULIAR TYPE OF WHISTLE FOUND IN ANCIENT AMERICAN INDIAN GRAVES¹

By BROR GUSTAVER

THE Journal of the Academy of Natural Sciences of Philadelphia (Vol. XVI) contains a paper entitled "Some Aboriginal Sites on Green River, Kentucky—Certain Aboriginal Sites on the Lower Ohio River—Additional Investigations on the Mississippi River—by Clarence B. Moore, 1916," in which are depicted certain peculiarly shaped objects, of which a specimen, and in a couple of cases two, has been found in some of the many Indian graves excavated and examined by the writer. Some of these objects are made of antler; others, the greater number, are of stone. They all have one distinguishing feature in common, namely that of being drilled through with a straight, cylindrical hole, from 12 to 18 mm. in diameter. Most of the antler objects are of a natural, irregular shape, except that their upper ends have been rounded off and made smooth. The remainder are slightly conical (truncated cones).

The stone objects are more remarkable in appearance. In most cases they are almost triangular in section, one side being slightly convex, the other provided with a sort of ridge. The side edges have in most of these objects been given an inward sweep, in a few of the specimens they bulge outwards, whilst they are in no case quite straight.

Three of the objects may well be called "winged stones," the "body" itself with its centrally bored hole being shorter than the thin "wings" projecting from it on either side. Fig. 51, A, B, C, and D, shows four different types of these specimens, A and B with sections.

Together with these tubularly pierced objects there has been found in all the graves an implement of antler, the base surface

¹ To Count Eric von Rosen, who arranged to have this paper written, I herewith wish to present my thanks, for having given me the pleasure of studying these interesting whistles, for his great kindness in translating this paper into English, and also for his assistance in the publication of it

of which has been hollowed out to a bowl-shaped depression, whilst its point end shows one or two notches (barbs). Also, these are depicted and described in Moore's paper. Moore presumes that the bored-through objects, particularly those made of stone, were sizers used in net-making, and that the long antler pieces with the notches were something like crochet needles with which the Indians wove their nets.

In a recently published paper which appeared in the journal *Ymer*, Count von Rosen² has propounded a wholly novel and interesting interpretation of these objects. As regards the latter group, the "needles," the reader is referred to the said paper, as they are not to be discussed here in any way. The

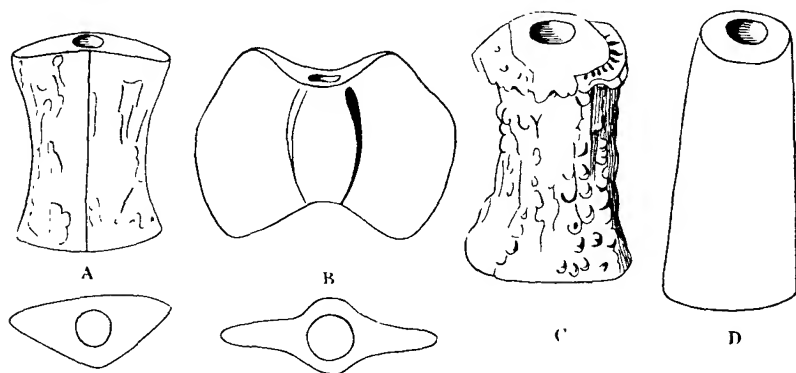


FIG. 51.

pierced objects Count von Rosen thinks are whistles, thus agreeing with Moore that besides being ornaments they had served some practical use. For a detailed account of the reasons upon which this opinion is founded, the reader is referred to the *Ymer* paper.

Count von Rosen has had replicas in wood made of four of the stone objects in question, and I have had the pleasure of seeing and testing these models. It was then found that they were remarkably well adapted to use as whistles, which circumstance I have accordingly certified in Count von Rosen's paper, at his request.

² Eric von Rosen: "En märklig visselpip typ [A Peculiar Type of Whistle]," *Ymer* (journal published by the Svenska Sällskapet för Antropologi och Geografi), 1921, p. 108.

In this paper I propose to deal somewhat more fully with the question whether these objects are fitted for use as whistles, in so far as it can be done without access to the originals.

I

To begin with, a brief account of what is known about tone production in pipes seems to me necessary. Its laws are well known, since the theoretical conditions have been analyzed in works by Bernoulli, Euler, Lagrange, and Helmholtz, only to mention a few of the investigators of this subject.

We know that the frequency n_m for the fundamental ($m=1$) and the overtones ($m=2,3$ and so on) of a pipe is computed from the following formulas:

$$(1) \text{ in a closed pipe: } n_m = \frac{2m-1}{4l} \cdot h,$$

$$(2) \text{ in an open pipe: } n_m = \frac{m}{2l} \cdot h,$$

where h is the velocity of sound in air, and l the length of the pipe. According to this simple theory, an open pipe of the same length as a closed one should give the upper octave of the latter. In reality it is, however, not so, for instead of the octave the seventh is obtained, which also happened in the case of the wooden models above mentioned (see Table I). The reason for this is the circumstance that the middle of the antinode does not exactly coincide with the open end of the pipe, but is to be found some little distance s beyond it.

The question is theoretically worked out for pipes with straight cylindrical bore, in the first place by Helmholtz, Lord Rayleigh, and Wertheim. The result, also confirmed by experience, is that the value of the displacement of the antinode outside the pipe is independent of the nature of the material and the length of the pipe and only depends on the diameter of the pipe bore. In narrow pipes the value of s was found to be 0.3 of the diameter of the hole but for wide pipes the correction approached the value of

$$(3) s = 0.4d$$

where d is the width of the pipe.

According to the theory of tone production in a pipe, the nature (material) of its walls does not influence the pitch, which only depends on the length of the air column. On the other hand, the walls are of some importance as regards *loudness of tone*. If they are thin, and of a less hard material, they are apt to fall into vibrations themselves when the pipe is blown with force. Energy is thereby consumed, and the tone weakens. A hard material is therefore favorable, as less energy is used up in the blowing.

The loudness of sound is greater in an open than in a closed pipe, as the sound is chiefly transmitted from the mouth where, in the case of the open pipe, the vibrating air column directly agitates the surrounding air. This may be easily observed if the open end of a sounding pipe is gradually closed up with the finger. The sound decreases in force, but the pitch is also lowered. This latter, however, occurs to a noteworthy degree only when the greater part of the hole has been blocked up. When all connection with the outer air has been shut off, the tone immediately drops to the octave below, which is the fundamental note for the closed pipe³ of the same length.

Also, by the introduction into the pipe of a peg or similar object, it is within certain limits possible for the blower at will to vary the pitch of the note which, however, differs only by a very few steps from the fundamental of the open pipe.

The width of the pipe is of great importance in respect of the quality of the note. It has already been mentioned how the correction for the length of an open pipe depends upon the diameter. The tendency of a pipe for giving overtones also depends on its diameter. The overtones are, as a rule, produced by increasing the blowing force; now, as high tones are natural to narrow pipes, these easily give the first overtone, whilst the fundamental note is difficult of production. On the other hand, in wide pipes the fundamental note is easily obtained, more or less accompanied by overtones, by which the note receives its special quality.

³ Taking into account the above-mentioned correction for open pipes, the interval will not be the octave but the major seventh

II

We will now proceed to investigate the extent to which the laws of acoustics are applicable to the antler and stone objects in question. All of them being bored through with a straight, tubular hole of a uniform width, cylindrical and with a circular section, it may in the first place be laid down that it is *possible* to use them as whistles or flutes, and that they give notes the frequency of which may be computed from formulas (1) and (2). In the carrying out of the calculation, account must however be taken of the correction as set forth in formula (3). But also at the other end of the pipe, the following end, the middle of the antinode falls outside the pipe. The correction thereby necessitated I have empirically determined in the following way: By trying the four wooden models (*vide supra*) I determined the pitch, and computed the true length of the vibrating air column into the pipe (half of the wave length). The correction to be ascertained was then equal this length, minus for the closed pipe the actual length of the pipe, and, for the open pipe, this latter quantity increased by the correction for the lower open end. The result is shown in Table I.

TABLE I

Wooden model. No.	Pipe		Fundamental note closed pipe open pipe	Frequency of vibration	Length of the vibrating air column, mm.	Length of pipe, corr. for open pipe, mm.	Diff. mm.
	length mm.	width mm.					
1	92	12	{ g''	783	106	92	14
			{ f''' sharp	1471	112	97	15
2	67	11.5	{ c'''	1044	80	67	13
			{ b'''	1957	85	72	13
3	65	11.5	{ c''' sharp	1109	75	65	10*
			{ c''''	2088	80	70	10*
4	42	13	{ f''' sharp	1471	57	42	15
			{ f''''	2784	60	47	13

Average of differences 13

* This note is slightly too high. For a lower note the difference is greater than 10.

The correction experimentally found for the blowing end is therefore 13 mm.

In Table II, I have given the computed vibration numbers and the tone pitch for *all* the objects of antler or stone depicted by Moore⁴ when used as open and closed sound pipes. In this table column 2 gives the locality of the find and the number of the grave, col. 3 the material, col. 4 the length and width of the pipes from measurements taken of the natural-size illustrations (col. 8). These measurements, particularly as regards the length of the bore, are no doubt more or less inaccurate, but may be taken to agree within 2 mm. with the corresponding lengths in the *illustrations*. Whether the dimensions given in the latter exactly reproduce those of the *objects*, is of course a matter beyond my judgment. The diameter is probably given with more exactness, as with each stone object there are three diagrams of its section (natural size). Column 5 gives the corrected value

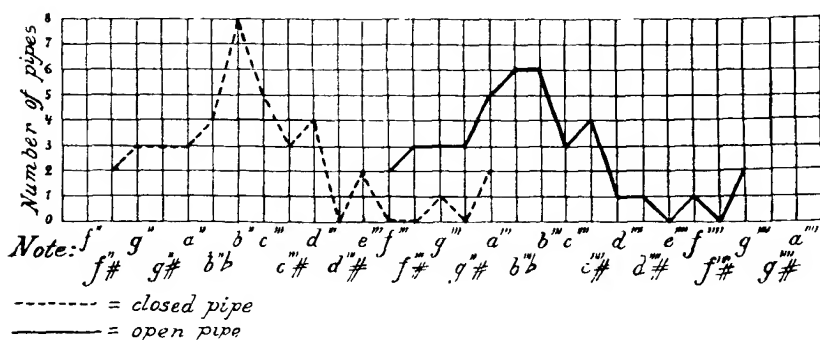


FIG. 52.

of the length [for the lower, open end according to formula (3), for the upper, blowing end *add* 13 mm.]. Col. 6 gives the frequency of the fundamental note, computed for open and closed pipes, [according to (1) and (2); the velocity of sound in air being taken as 333 m sec.]. Col. 7 gives the names of the corresponding notes.

The distribution of the number of pipes over the different notes of the scale is shown in Fig 52, which should require no further explanation.

III

It has already been stated that all of these objects *can* be used as pipes with which notes may be produced. Table II and

⁴ Moore, loc cit.

TABLE II

1	2	3	4		5		6		7		8
No	Locality of find and No of grave	Material	Tubular bore		Corrected length		Frequency of the fundamental		Fundamental note for		Reproduced in natural size by Moore, loc. cit
			length mm.	width mm.	closed pipe	open pipe	closed pipe	open pipe	closed pipe	open pipe	
1	Austin place	Sandstone	68	12	81	86	1028	1936	c'''	b'''	Pl IX A
2	The Indian Knoll	Quartz	35	14	48	54	1734	3083	a'''	<g'''	" B
3	"	Limestone	66	14	79	85	1054	1959	c'''	b'''	" C
4	"	"	62	11	75	79	1110	2107	d'''	c''' sharp	" D
5	"	"	45	14	70	76	1189	2191	e'''	b''' sharp	" E
6	"	Feriferous fossil limestone	57	14	70	76	1189	2191	d'''	b''' flat	" F
7	"	Antler	70	<13	83	88	1003	1892	f' sharp	c''' sharp	" G
8	"	"	124	<15	114	120	730	1387	f' sharp	c''' sharp	" H
9	"	"	29	11.5	95	100	876	1665	a'''	g''' sharp	" I
10	In the earth	"	82	14	95	101	876	1648	a'''	g''' sharp	Fig 3
11	Austin place	"	102	16	115	122	724	1365	f' sharp	f'''	"
12	Calhoun	"	93	"	106	111	785	1500	g'''	f''' sharp	" 4
13	The Indian Knoll	"	93	14.5	106	112	785	1487	g'''	f''' sharp	" 9
14	"	"	77	16.5	90	97	925	1716	b'''	f''' flat	" A
15	"	"	77	"	103	108	808	1541	a'''	g''' sharp	" B
16	"	"	82	"	95	100	876	1665	a'''	g''' sharp	" C
17	"	"	93	"	106	112	785	1487	a'''	g''' sharp	" D
18	"	"	74	16	87	93	957	1790	b'''	>a'''	" E
19	"	"	65	16	78	84	1087	1982	b'''	b'''	" F
20	"	"	63	14	76	82	1095	2030	c'''	<c'''	" G
21	"	"	51	18	64	71	1301	2345	c'''	d'''	" H
22	"	"	88	14	101	107	824	1556	g'''	g''' sharp	" I
23	"	Limestone	58	>11	71	75	1172	2220	d'''	c''' sharp	Pl X A
24	"	Striated clay slate	37	12	70	75	1190	2220	d'''	c''' sharp	" B
25	"	Chalcedony	61	15	74	80	1125	2081	c'''	c''' sharp	" C
26	"	Granite	71	12	84	89	991	1871	b'''	c''' flat	" D
27	"	Quartz	77	12	90	95	925	1752	b'''	b''' flat	" E
28	"	Gneiss	77	11	90	94	925	1771	b'''	a'''	" F
29	"	Siliceous mat. ressembl. jade	74	12	87	92	957	1810	b'''	a'''	" G
30	"	Coarsely crystalline rock	68	12	81	86	1004	1936	b'''	<b'''	" H
31	"	"	73	12	86	91	968	1829	b'''	b''' flat	" I
32	"	Quartz	75	12	88	93	946	1790	>b'''	a'''	" XI A
33	"	"	41	15	54	60	1542	2775	g'''	b'''	" B
34	"	Clay slate	70	12.5	83	88	1003	1892	b'''	b''' flat	" C
35	"	"	59	13	63	68	1321	2448	c'''	d''' sharp	" D
36	"	Limestone	87	13	100	101	833	1586	g'''	g''' sharp	" E
37	"	Striated clay slate	69	12.5	82	87	1015	1914	c'''	b'''	" F
38	"	Siliceous mat. ressembl. jade	74	12	87	92	957	1810	b'''	b''' flat	" G
39	"	Quartz	60	12	73	78	1140	2134	<d'''	c''' sharp	" H
40	"	Gabbro	65	12	78	83	1067	2006	c'''	b'''	" I
41	"	Flint	34	12	47	52	1771	3202	a'''	>g'''	" XII

Fig. 52, show that all such notes fall within a very limited compass of the scale, most of them within one octave. Thus the open pipes give notes in the neighborhood of *c* *four-marked*. *This is exactly the most favorable pitch for a good whistle tone*, which should be sharp and piercing. Tones higher than this are thin, whilst lower ones are too dull and faint to be of much effect. It is, probably no mere accident that all these antler and stone objects show such a conformity as to length. If they were intended for whistles, they have been given just the right length for producing a good whistle tone.

In all these objects the material consists of a *hard substance*, i.e., antler or stone. And, as has already been pointed out, this is also a matter of importance in the making of a good whistle, as the *force of the sound is thereby increased*.

The whistle should be blown with its ends open; this gives a higher tone and greater loudness. It is true that the closed pipe, too, will easily give a high note, namely the first harmonic, equalling the fifth of the octave of the fundamental note, but this is weaker in sound than the fundamental note of the open pipe.

The diameter of the bore is of the greatest importance. In narrow pipes harmonics are very apt to arise. In all these pipes, however, the bore is comparatively large. In open pipes this tends to render more difficult the production and appearance of the first harmonic, and *such pipes may be blown with great force, and yet give their fundamental note, whilst the first few overtones, which are always present, give the sound a penetrating shrillness*.

Although in these objects the similarity of length points to some definite purpose, such purpose might conceivably have been some other than the production of suitable toned whistles. Their decorative shape, and the finely worked material, in the case of the stone objects, speak for the probability of their having been used as ornaments and worn on a string round the neck. A thin cord through the bore does not interfere with the tone when an open tube is blown, if the bore is of the diameter that is here used. As these ornaments were worn on the breast, they could not conveniently be made more than 10 cm. long. In this way the adapted length might be explained. But the very fact

that the objects in question were worn round the neck on a string passed through the perforation provides our strongest, and decisive, proof that they are whistles. For in Moore's work are depicted five objects (beads, etc.), exclusively designed as ornaments, through each of which a hole has been bored for stringing on a cord. *In these the hole has a diameter of only 2 to 4 mm.* If the hole had been made only for the purpose of enabling the owner to wear the object strung on a cord, it is safe to assume that the trouble would not have been taken to make the hole from 11 to 18 mm. in diameter, and so even and smooth as is here the case. It would have been sufficient to make holes of the same diameter as those in the five ornaments just referred to.

In the objects with which we are concerned it is therefore clear that *the bore is the essential feature*. Add to this that the diameter of the bore in all these objects, including those made of antler, is strikingly similar, and precisely the one most suitable for a whistle.

In a flute, the mouth orifice is of the same size (11 to 12 mm.), and in the blowing of this instrument the notes are produced in exactly the same way as in a whistle of the type before us.

In conclusion I only wish, in a few words, to touch upon the practicability of using the four wooden models, frequently mentioned in the foregoing. This may be of interest as a means of inferring to what use the stone originals might have been put by their owners, the Indians. If we then know also the prevalence of the use of these instruments among the Indians, we may perhaps be in a position to draw interesting conclusions with respect to their cultural position. This is, however, a question I leave entirely to the specialists to discuss.

In the first place, as regards the possibility of producing tones in pipes of this kind, this is a fairly simple matter when blowing a closed pipe. It is like blowing a tone into the barrel of a key, but somewhat more difficult when the pipe is open. A little practice will, however, soon give proficiency. The blower can vary the note a little by changing the position of his lips at the end of the pipe. A certain position will be found the most favorable for tone production, and will insure the

loudest and most sonorous tone. The wooden models 2 and 3, Table I, which are of nearly equal length, may be blown so that the difference will be quite a semi-tone, but, on the other hand, in such a way that there is no difference at all. It is also possible for the blower to "tune" his instrument with his finger, when the pipe is blown open-ended. Yet it is hardly likely that the Indians, if—as is conceivable—they simultaneously used their pipes in chorus, tried for or obtained harmonious chords, for it may be taken for granted that in such case they would have made inter-attuned pipes, simply by modifying the lengths in the right way.

In Table III, I have grouped together such pipes as were found in the same grave, and therefore belonged to the same owner, in order to see whether they were attuned to each other.

TABLE III

Pipe nr. (Table II)	Nr of grave	Fundamental Note		Intervals between the fundamentals	
		closed pipe	open pipe	closed pipes	open pipes
21 38	202 202	g'' sharp d''' (c''' sharp)	g''' c'''' sharp (c'''')	fourth	fourth
3 20	2 2	c''' e'''	b''' d''''	major third	minor third
6 8	29 29	b'' a''	b''' flat g''' sharp	major tone	major tone
12 17	272 272	g'' b''	f''' sharp > a'''	major third	minor third

The notes of each pair of pipes, excepting the third pair, certainly sound in consonance, but the probability is slight that this has been aimed at.

When blown with the pipes open, the wooden models make excellent whistles. Especially is this the case with No. 4, with which it is easy to produce whistling sounds of such penetrating sharpness as to be almost deafening. The note is probably a resultant formed by the fundamental note and the nearest

harmonics, hence its discordant timbre. When the pipes are blown closed, they have a soft flute-like tone, the fundamental note then being produced almost pure.

It is possible to vary the pitch, but it requires a tolerably advanced skill to produce pleasant and pure notes of definite pitch. The introduction of a very thin peg into the pipe causes no noticeable change in the note. If the upper end of such a piston be flat and almost big enough to fill the width of the pipe, the note drops to a minimum only when the piston has been inserted to about one-third of the pipe's length. With the piston pushed half-way into the pipe, this one again gives its fundamental. In this position the piston does not interfere with the air vibrations inside the pipe, as then its flat end coincides with the node at the middle of the pipe. If the piston is pushed farther in, the thus shortened pipe will give a higher note. The interval between the highest and the lowest note in this way obtainable is about a fourth. Therefore it is hardly possible to play any melodies on these simple instruments.

A further interesting detail is found in the exterior shape of the stone pipes. The broad projections at their sides form excellent handles for holding the pipe when blowing it. Especially noteworthy in this respect are the three short whistles numbered 2, 32 and 40, respectively in Table II. (Winged stone, cf. Fig. 51, B.)

KARLSBAD,
SWEDEN.

THE NÁHUAN CHRONOLOGY: ASTRONOMICAL
SIGNIFICANCE OF THE NUMBER
THIRTEEN

BY MIGUEL O. MENDIZABAL

THE finest spiritual manifestation of the American aborigines was indubitably their religious contemplation of the heavenly bodies—sublime symbols of the gods—their methodical and persevering studies of the phenomena that caused the apparent or real movements of the celestial bodies, and an active and superior intelligence which enabled them to evolve from their abstract conception of time a concrete system of chronometric calculation.

The glory of achieving by means of their calendary systems the maximum exactitude of their time—not exceeded in perfection even in our century—fell to the lot of the peoples of Náhuatl affiliations, in particular those known as Toltecs.

Before delving deep into the subject matter, let us refashion hypothetically the evolution of their chronology, which, inasmuch as it was inextricably bound up with the development of astronomy, must necessarily have been shaped during many centuries.

The periodic alternation of light and darkness upon the earth gave birth to the first idea in chronology—charming legends of the love between Cipactonal (the Day) and Oxomoco (the Night), whereof the fruit was Time. Probably, in the dawn of their civilized life, they calculated time by making the astronomic day conform to the lunar periods, an elementary system followed still by some primitive American tribes. But the annual calculation necessarily required wider and more complex studies, and this computation was reached by utilizing their knowledge of the movements of the sun between the solstices and the equinoxes, which they called *Nahui-Ollin* (four movements). We lack data justifying the supposition that they attached chronologic im-

portance to the zodiac, although we know beyond peradventure that they were familiar with certain of its constellations.

The annual calculation, together with its corrections used to reconcile the civil with the astronomic calendar, unquestionably used by the Náhuas from very remote times, was based upon the chronologic concepts of the aborigines, with the same appreciation of the sidereal importance of the sun—this being the primordial and all-obvious deity of theogony. But their subdivisions and cyclical combinations constituted without doubt the origin and effect of the mythologic and astronomic differences—a veritable millenary battle launched by the priests of the rival gods Tezcatlipoca and Quetzalcóatl.

By virtue of this the priesthood of Tezcatlipoca observed closely and perseveringly the celestial course of the moon, since we know that the satellite of the earth was the sidereal representative of that deity. This ministry determined their four movements with relation to the equinoxes, *Nahui Ollin*, lunar, and *Ollin-mettli*, and assuredly combined the lunations as divisions of the year. We may permissibly so surmise from the fact that in the Náhuatl tongue *meztlī* signifies both moon and month, for though Mendieta says that this use of the word *meztlī* referred exclusively to the month in the Julian calendar, his assertion is illogical, inasmuch as the Spaniards did not call their month *luna*, the moon. Probably they finally made correcting intercalations in their lunar calendar to reconcile it with the solar regimen, though we lack data to affirm this despite the efforts which investigators have made to supply it.

Meanwhile the priests of Quetzalcóatl followed closely the movements of the planet Venus, coördinating her different movements with the apparent revolutions of the sun, arriving at the remarkable concept of the cyclical calendar, which constrains our admiration.

In the year 5097 of the indigenous era according to Ixtlilxóchitl (the year 700 of the Christian era), on the occasion of the beginning of the fourth sun or the cosmogonic age of Tlaltonatiuh, there assembled at Tollan a great number of erudite men to consider various happenings and the movements of the heavens

which had taken place since the birth of the world, and as a result the calendar was reformed. The chronologic regimen implanted by virtue of the meeting of learned Toltecs was, without doubt, the system which the Spaniards found to govern among the nations of Náhuatl origin and among those which had been influenced by their pervasive culture. Was it in that memorable gathering that the lunar-month system fell into disgrace? Was it in some one of the previous foregatherings to which history vaguely refers? It were difficult to say; but if that system existed in the Náhuatl chronology, there could have been no better occasion for its disavowal than the great meeting at Tollan, since it initiated, one may say, the period of splendor of the cult committed to the star Venus, sidereal representative of Quetzalcóatl, eternal rival through the cosmogonic ages of the moon, the astronomic representative of Tezcatlipoca. In any event, the movements of the moon did not in any wise intrude into the chronologic system established by the assembly referred to, as will be clearly shown in the course of the present study.

The ingenious pictograph for chronologic purposes which we know by the name of *tonalámatl* (schedule of days) or *cemilhuittla-pohualiztli* (record of the feast or ritualistic days) was made use of by Náhuatl priests, as the name indicates, to regulate the religious festivities. In it appeared twenty symbols: (1) cipactli, (2) ehécatl, (3) calli, (4) cuetzpallin, (5) cóhuatl, (6) miquiztli, (7) mázatl, (8) tochtli, (9) atl, (10) itzcuintli, (11) ozomatli, (12) malinalli, (13) ácatl, (14) océlotl, (15) cuauhtli, (16) cozca-cuauhtli, (17) olin, (18) técpatl, (19) quiáhuitl, and (20) xóchitl. These twenty symbols, repeated thirteen times in the order indicated, in consonance with a numeral of the series one to thirteen which is repeated consecutively twenty times, give as a result two hundred and sixty different ideograms, inasmuch as each symbol was acted upon once by each numeral. These ideograms are grouped in series of thirteen, in obedience to the numeral that acts upon them, thus constituting the twenty divisions of thirteen which are characteristic of the *tonalámatl*. Each symbol with its respective numeral represents one day in the calendarian ritual which, beginning its computation with the first symbol

cipactli, acted upon by the first numeral (one), corresponding to the first day, terminates at the end of the 260 with the last symbol xóchitl, acted upon by the last numeral (thirteen). This calculation was repeated without interruption or variation seventy-three times during the minor Náhuán cycle which had a duration of fifty-two civil years.

The civil calendar was not in reality another calendar, but an ingenious and special computation, worked out from the same tonalámatl, by which means the civil year unit of 365 days was obtained. If in the ritualistic calendar the tonalámatl was considered as divided in obedience to the series of numerals one to thirteen used in conjunction with the symbols, so obtaining the symbolic periods of thirteen, for the civil calendar the symbols themselves were taken into consideration, constituting the series of twenty symbol-divisions, as with our months, christened according to the principal festive day or the characteristic of the time which they embraced. And as eighteen of these months made only 360 days, the remaining five days were computed as outside of the months and given the name *nemontemi* (useless ones). Taking as an example the first year of an indigenous minor group or cycle in which the ritualistic and civil computations began conjointly with the symbol representing the first day, cipactli, acted upon by the numeral one, all the months of that year—the first in the reckoning—will run from cipactli to xóchitl in the order which we have indicated; the first thirteen-twentieths of the symbols or months will correspond to the first course of the tonalámatl; the remaining five months will correspond to the first five-twentieths of the symbols of the second course of the tonalámatl, and the complementary days, the *nemontemi*, correspond to the first five symbols of the sixth twentieth, that is, to the symbols cipactli, ehécatl, calli, cuetzpallin, and cóhuatl. The second year of the cycle, since we shall have to adjust its development to the immutable course of the tonalámatl, will not begin with the symbol cipactli, but with the symbol following that which constituted the last in the former, that is, with miquiztli, and the twenty symbols of the months will then run from miquiztli to cóhuatl, and to them as symbols for the “useless days” cor-

respond the five days which follow of the twentieth, that is, miquiztli, mázatl, tochtli, atl and itzcuintli. In the third year the months will run, consequently, from ozomatli to itzcuintli and the "useless days" will be ozomatli, malinalli, ácatl, océlotl and cuauhtli; in the fourth they will proceed from cozcacuauhtli to cuauhtli, with the symbols cozcacuauhtli, ollin, técpatl, quiáhuitl, and xóchitl, as "useless days"; whence, xóchitl being the last symbol of the twentieth, the fifth year will again begin with cipactli, this especial distribution of symbols in months determined by the computation of the five "useless days," repeating itself in series of four years. But, as these symbols of the days are acted upon by a numeral of the series from one to thirteen, the result will be that each of the fifty-two years of the cycle will vary, either by reason of the symbol or the numeral, and will form fifty-two different calendars, resulting from the computation of the civil year in obedience to the unalterable course of the tonalámatl.

Each of these years in the series of four—different because of the disposition of the symbols—was represented in its turn by the symbols tochtli, ácatl, técpatl and calli, being repeated thirteen times in the course of the cycle; but as they were likewise acted upon by a numeral in the series one to thirteen, repeated four times, each of the fifty-two years had its proper ideogram and special name.

We have seen that, upon concluding the group or cycle in the minor Náhuan arrangement, the 260 days of the ritualistic calendar had run seventy-three times consecutively, without any variation whatsoever, while the 365 days of the annual civil computation had produced fifty-two different calendars. Both calendars began their progression with the symbol cipactli, acted upon by the numeral one of the series and terminated in perfect harmony with the symbol xóchitl, acted upon by the last numeral of the series (thirteen). That is, both calendars had a cyclical consonance at the end of each minor cycle. However, notwithstanding its calendarian importance, this was not the most important cyclical concordance, as we shall see in due time. At the termination of each group, or minor cycle, the Náhuans

refrained from computing thirteen days, with the purpose of reconciling their civil calendar with the astronomic calendar; and, when these thirteen days had passed, they began anew their computation of the cycle, precisely as they had done with the preceding cycle; both cycles formed a *huehuetiliztli* (old period or period to be revered), a cycle of 104 years, sacred among the aborigines. The union of the two cycles to form a *huehuetiliztli* they called *toxiuhmolpia* (binding tie of our years). A *huehuetiliztli* was succeeded in precisely the same manner by another *huehuetiliztli*; four constituted an age of 416 years—a cycle par excellence—wherein figured all calendarian and astronomic concordances. One age was succeeded by another age and so indefinitely in the passage of time.

Now then, in the composition of the *tonalámatl* twenty symbols figure which are repeated thirteen times, and thirteen numerals which are repeated twenty times, making a total of 260 ideograms all of which are different. The computation of the civil year, wrought from the same ritual calendar, embodies three different numerical factors—365, the number of days; 18, the number of months; and 5, the number of the *nemontemi* (or “useless”) days. In the indigenous minor cycle there appear as numerical elements: 52, the duration of the cycle in civil years and 73, the number of ritualistic years which constitute a group or cycle. The 73 ritualistic years run consecutively, without special name and without giving rise to divisions, but the 52 civil years continue grouped in four *tlalpilli* (periods) of thirteen years each, and each of these years, as we have already mentioned has a name and a symbol derived from the four symbols of the years acted upon by a numeral of the series from one to thirteen.

To recapitulate, we have as numerical elements in the calendars of a group or minor cycle, both ritualistic and civil, the following numbers: 20, 13, 260, in the *tonalámatl*; 18, 5 and 365 in the civil annual computation; 73 in the minor cycle of *tonalámatl*; 4, 13, and 52 in the minor cycle of the civil computation. The 18 and 5 are absolutely the arithmetical results of the division of 365, the number of days, by 20, the number of the symbols of the days, and 365 is the duration, in days, of the civil year;

73 ritualistic years and 52 civil years are numbers which have cyclical origin, inasmuch as at their termination the two computations agree. Accordingly we have remaining the numbers 20, 4, 13, and 260 as mysterious fundamental elements in the Náhuatl chronology. Let us investigate their origin.

It has been supposed that the twenty symbols of the *tonalámatl* are derived from the division of the Náhuatl zodiac into twenty constellations. This supposition is unsupported by any valid proof, and the probability of its being well founded would exist only if the symbols had referred to twenty periods, together embracing the 365 days of the year, since then they might be held to relate to the position of the earth with reference to twenty parts of the zodiac, but representing days as in the ritualistic calendar or periods longer than the year. As we shall learn in the course of this study, the assumption is illogical.

Don Alfredo Chavero opined, and quite justly, in my view, that the twenty symbols of the days were reduced originally to four fundamentals, disposed in the following manner:

Acatl, técpatl, calli, tochtli, ácatl,
Técpatl, calli, tochtli, ácatl, técpatl,
Calli, tochtli, ácatl, técpatl, calli,
Tochtli, ácatl, técpatl, calli, tochtli.

Chavero supposes that, to avoid confusion, they left to the initial days of the periods of five days their primitive names, substituting different symbols for the rest, although with the same symbolic signification. And, in consonance with this hypothesis, we need not now seek the origin of the utilization of the number 20, but that of 4 and 5; and this is more in harmony with the spirit of the numerical system of the Náhuatl, since 4, the number of the human extremities, and 5, the number of fingers (or toes) of each extremity, are basic elements in the system. We can agree at the outset that the use of these numbers as fundamental elements in a chronology, by virtue of their numerical importance solely, or their basic importance perhaps, as in the present case, is inadmissible, or that it is restrictedly admissible—as a multiplier for instance of a number which may have some deep significance, mythical or astronomical, to obtain another number of the same entity.

What significance, apart from its numerical importance, could the number 4 have had in the conception of the aborigines? The answer is very simple—nearly all annalists, historians and archaeologists are in accord in the matter. Four was the number of the primordial gods—Tonacatecutli, Tonacacihuatl, Tetzcatlipoca and Quetzalcóatl; four are the celestial bodies which they represented, from whose movements and positions their chronology was deduced—the Sun, the Earth, the Moon, and Venus; four the cosmogonic ages into which it was deemed the life of the world was divided—Tletonatiuh (fire or solar age), Tlaltonatiuh (earth age), Atonátiuh (water age, and age of the moon), and Ehecatonatiuh (air age, the Venus age); and likewise there were four universal elements—fire, earth, water, and air. The Sun was represented by its four apparent movements in the ideogram of Nahuí-ollin (four movements) and Ollintonatiuh; the Moon was customarily represented similarly by an analogous ideogram, Ollinmeztli; the movements of the Sun produced and supplied the designations for the four seasons of the year; four were the cardinal points derived by the Náhuans from the movements of the Sun; and all these ideas, so diverse in nature and varied in effect, were represented by ideograms which were essentially analogous to the four symbols of the years and to the four initial days of the periods of five, which we might term the indigenous week. This makes it clear that the number 4 was not used exclusively as a numerical element in the calendarian combinations; its origin is theogonic, cosmogonic and astronomic, in addition to its being a basic factor in the numeration. Let us now pass on to the number 5.

Beginning with the erroneous supposition, which to date has served investigators as a basis, that the tonalámatl was worked out with the idea of measuring, for reasons ritualistic or mystical, 260 days in the year, and accepting as good the multiple reasons which we have given for the use of the number 4 as a basic element in the chronology, we should have to explain the use of the number 5 as being exclusively arithmetical to obtain, by the multiplication of 4, 5, and 13, the result 260, the days of the tonalámatl;

but, to discover logic in the system, we should have to explain the origin of the number 13 and the significance of 260.

Some students have sought to correlate 13 in a cosmogonic concept, inasmuch as 13 is the number of the firmaments which appeared on the first page of the Codex of the Vatican; yet neither were the interpreters in accord as regards this number, because of the mysterious quality of the Omeyocan (the second place, or two places), nor was the indigenous concept uniform in this regard, since there are traditions which embody eleven firmaments. The annalists differ similarly, for while Fray Bernardino Sahagún records thirteen, and twelve, Torquemada records twelve, and Muñoz Camargo, nine. In view of the obvious disagreement, it is impossible to accept the conclusion that the number of the heavens constituted the chronologic basis.

Other writers hold, along with Siguenza y Góngora, that the number 13 had its origin in the number of the principal gods, but, as we have said before (and this has an infinite number of corroborations in the Codices), there were four primordial deities in the Náhuatl theogony, and it is necessary to bear in mind, in the supposition that 13 refers to the number of divinities—secondary, deities, whose number and importance differed among different peoples and in the various epochs—that the chronologic system remained, substantially, unchanged. Moreover, the nine divinities, called “Attendants of the Night,” who represented successively patrons of the symbols of the tonalámatl, entirely defeat this hypothesis, since, being utilized as they are as a factor in the cyclic calendar, it is impossible to ascribe a oneness of origin to two different numbers which are to collaborate in the ultimate concordances of the calendars; and even though this were possible we should not consider as a fundamental calendarian factor a varying number of gods, particularly and chiefly where this hypothesis finds no substantiation in the indigenous paintings.

Similarly, attempts have been made to attribute an astronomic origin to the mysterious thirteen in connection with the movements of the moon. Boturín holds that the indigenes divided the lunations into two parts, one called *desvelo* (watching), when the moon illumined the night, and the other called *sueño* (sleep)

when the moon was visible by day, each having a period which continued thirteen days. Gama amplified and elucidated the same concept, saying that the thirteen units represented the diurnal movements of the moon, from the time it appeared after the conjunction until a little after the full moon, and this interval, during which the moon was visible, they called *Ixtozoliztli*; and when by night it began to disappear until the conjunction was near—when it was seen by day—it was called *Cochiliztli*, because they believed it then slept during the night. Orozco y Berra not only accepts the validity of this hypothesis, saying that thirteen represents one-half of the time in which the moon is visible during a lunation, not counting the days, a little before and shortly after the conjunction, when it is not visible; but goes farther in his idea that the thirteen units of the *tonalámatl* bear a relation to the movements of the moon, and in elaborating a cycle of 2,360 days by multiplying 260 (days in the ritualistic calendar) by nine (probably the “Attendants of the Night”), obtaining for result 2,340, to which he adds 20 days, that is, the series of 20 symbols, the result being 2,360—equivalent, with slight variation, to 80 lunations. But Mr. Orozco y Berra, despite this cyclic combination, so forced and arbitrary, failed to arrive at any calendarian concordance.

Chavero, on the contrary, rejects the hypothesis referred to, and triumphantly demonstrates that the legend of the *desvelo* (watching) and the *sueño* (sleeping) of the moon is analogous to the legend of the sun, which, according to aboriginal notions, served to light the dead during the night, being related, in consequence, to the movement of the moon in twenty-four hours.

The tendency, absolutely erroneous, of attributing to the number 13 a relationship with the movements of the moon, has its origin, apart from the imperious necessity of explaining its employment, in the fact affirmed by Gama that the indigenes called the *tonalámatl* also *meztlapohualli* (lunar computation). This should not evoke surprise, for it is easy to appreciate that the majority of the indigenes continued living in as utter ignorance of the secrets of science and of the mysteries of the Náhuatl theogony as the Spaniards themselves—a natural result in such

an infinite number of theocracies, whose priesthoods were vitally interested in restricting the secrets of religion to the precincts of the temples.

Even the priesthood of the peoples of Náhuatl origin—at least, many who constituted it—would indubitably have been uninstructed as regards the astronomic and theogonic annals of a chronology which they had received, pre-fashioned, as an inheritance from the Toltecs. At any rate, if they did understand them fully, they jealously guarded their secrets.

The origin of the number 13 has no relation to the lunations, for it is impossible to admit of a calendarian regimen which proceeds absolutely at variance with the phenomenon in which it had its origin, yet this would happen in our case since the computation of the thirteen units of the *tonalámatl* was successive and invariable, while the periods of thirteen days which students have sought to link up with the lunations would continue to succeed one another with an interval of a day—18 hours and 22 minutes, i.e., with a difference of 3 days, 12 hours and 44 minutes in each lunation. This is unacceptable, particularly since we have no data, either from annalists or the many different chronologic documents available, justifying the belief that a corrective factor existed—such as we use in harmonizing the civil year with the astronomic year—which served to reconcile the *tonalámatl* with the movements of the moon.

Yet I firmly believe, even though the destruction of the indigenous paintings has, perhaps, deprived us of the opportunity to verify it, that the Náhuatlans, profound astronomers, understood the movements of the moon as well at least as the movements of the other celestial bodies, since the lunar phenomena, manifesting themselves at short intervals, are easily observed; and probably they would have taken note of the cycle of nineteen years at the termination whereof the lunar phases coincide anew with the same dates in the solar calendar, or some other cyclic period, with relation to the different celestial bodies which attracted their continual observation; but I deny that these were included in their calendarian combinations, due to motives arising from religious conflict to which I have already made reference.

Thus, not discovering aught of astronomic origin in any celestial phenomenon in the period of a year, it remains for us to consider the matter only as a numerical element. Is this possible? By no manner of means, since it is not a fundamental number in the system of Náhuán numeration, like the 4, the 5, and the 20. Mr. Chavero, considering the numbers 4 and 1 to be symbolic, as indeed they are, explains for us the origin of the number 4, saying that $4+4+4+1=13$; this cannot be objected to arithmetically, but it cannot be taken seriously; and even though we may assume for the moment that it did, indeed, have an origin exclusively numerical, we should do so in order to arrive at a given result, i.e., by the successive multiplication of 4 (a symbolic number) by 5 and by 13 to arrive at the number 260; and in this case 260 would hold the secret of the Náhuán chronology. How could this be?

Father Motolinía referring to the *tonalámatl*, says:

This paradigm which is placed here may be called the calendar of the Indians of New Spain, reckoned from a star which begins to appear in autumn issuing from the west in the afternoons and manifesting a clear and resplendent light, as he who has good vision and seeks understandingly may see from midday on; this star is called Lucifer (Venus), also by another name, *Sper*, and from the latter name of the star our Spain called it *Speria*. And as the sun recedes and the days become shorter, it would seem that this star begins climbing up, each succeeding day appearing somewhat higher until, seemingly, the sun turns to greet it, in the summer being close to it and it finally merges with the sun in whose light it is lost to view; and during this period of days, from its first appearance and mounting on high and its final merging in the sun and disappearance, 260 days are counted on this Earth, and this number of days are embodied in the calendar or paradigm.

This interpretation of the great Motolinía contains a truth, namely, that the *tonalámatl* relates to the movements of the planet Venus, though not exclusively, as he asserts; and he is much in error in believing that the heliacal rising and setting of Venus, "which are as 260 days on this earth," to use his expression (in reality they are 292 on the average), constituted the basis of the ritualistic calendar. This system suffers the same defect as that which attributes the origin of the number 13 to the half of the lunations, i.e., a want of concordance between the calendar and the celestial phenomenon wherein it had its origin, since his

assigning, immediately and invariably, one course of the tonalámatl to another course, where there is no immediate heliacal setting and rising of Venus, would cause the ritualistic calendar and the movements of its planet to proceed in complete disaccord.

The tonalámatl is something grander and more perfect. Only our inexplicable ignorance of its origin and real significance has constrained us to devise so many ingenious hypotheses, in which, though with the best of intentions, we have ascribed to it imperfections which it utterly lacks.

Enrique Juan Palacios, in his admirable work entitled *La Piedra del Sol* (Astronomical Tablet of the Sun), to which production Mexico has not accorded the consideration it merits, maintains that the Náhuatl chronology is formed of elements exclusively astronomic, and he is right, since the tonalámatl, which is the most excellent expression thereof, is the most ample and harmonious calendarian system that the human mind has evolved, and all the elements of it, absolutely all, are of astronomic origin.

To this day its origin has remained a mystery, for since those bent on research have directed all their efforts toward discovering the reason for the use of 260 (days) in the ritualistic calendar, seeking it in celestial phenomena equal to or less than this number, they have never been able to arrive at an acceptable conclusion. Let us attempt to find other solutions than those suggested by the vagueness of the significance of the word tonalámatl or tonalpohualli, because in either case, and even of others, as we have before intimated, the ritualistic calendar was well known.

Motolinía, referring to the significance of this word, tells us that this computation is called "tonalpohualli," which means sun record, because the interpretation and significance-scope of this word, by extension, means a computation-record of the planets and celestial bodies which illuminate and give light, and this did not connote solely the planet known as the sun. Although Motolinía makes this exposition with the object of dissociating the sun from this reckoning, we must take it in its true sense, that is, as not referring exclusively to the sun, yet not excluding it, since the reference is *precisely* to the combined movements of

the sun and of the planet Venus. Now then, if this word has a significance so broad in its scope that it relates to the light from the different celestial bodies, then the limits of this reckoning cannot logically be determined with exactitude; it may be annual if it relates to the sun, or refers to a period longer or shorter than a year, according to the celestial body indicated by it, and could even be cyclic if it relates to the luminous movements of two or more bodies in the heavens that have periodic concordance. And so, in fact, it is. The tonalámatl is a cyclic calendar of the movements of the planet Venus and the sun and it embraces an indigenous age of 416 solar years within which all the astronomic and calendarian concordances occur, and, at the same time, by means of an ingenious combination, it is a ritualistic calendar for 260 symbols.

The certitude of this duality of functioning of the tonalámatl will be made clear to us by a detailed and methodical study of the codices which contain these precious chronologic documents of the Náhuans. In the tonalámatl of the Aubin collection— unquestionably a ritualistic calendar—appear twenty characteristic divisions of thirteen; and in it appear the nine hieroglyphs of the deities called “Quecholle” or “Attendants of the Night,” successively watching over the days. And, moreover, the 260 diurnal symbols are acted upon by their corresponding number of the series from one to thirteen. In this document the symbols unquestionably represent ritualistic days. The tonalámatl of the *Codice Matritense* (Madrilenean Codices), which illustrate the *History of the Things of New Spain* by Fray Bernardino Sahagún, published by Paso y Troncoso, presents to us its 260 symbols acted upon likewise by their respective numeral of the series from one to thirteen, a circumstance which makes us certain that they also represented days; but in this document the “Attendants of the Night” perform no *office of vigilance* of the days, as in the former, whence I believe it is not ritualistic in character, and that we should consider it rather as a perpetual calendar, since by its successive courses the civil computation may continue on indefinitely. In this case the “Attendants of the Night” would be super-erogative, their true place being in the ritualistic calendar.

Finally, several paintings of the tonalámatl exist, such as those which appear in the Borgia Codex and in that of Bologna and the Vatican ritual, in which the 260 symbols are not grouped in thirteenths and are not acted upon by any numeral. In this last-named case the tonalámatl exercises its true function as a cyclo-astronomic calendar—the source of all other calendars; its symbols represent neither days nor years, but synodic movements of the planet Venus, as I shall demonstrate, relying upon the tonalámatl, by the first eight pages of the Borgia Codex. These are typical of those of their class, by virtue of their inclusion in the indigenous painting of most unquestioned authenticity and of highest chronologic value.

Mr. Palacios in his *Piedra del Sol*, referring to the fourth zone of chronologic symbols of the tablet referred to, comprising 260 points in groups of five—as a result of which they are known by the name “quintiduos” (pertaining to 5 and 2)—says:

Until now, it has been understood that the elements in question represent the tonalámatl or cecenpohualli, fundamental computation of the indigenous chronology. Nevertheless, this is an error. In addition to its being inscribed on another portion of the relief, the distribution of the 260 numerals in groups of five, and not of thirteen, points, demonstrates by itself alone that it is not a sacred book, calculated fundamentally by thirteenths. The points in reference denote years, and not days as it has been supposed; and if they appear distributed in “quintiduos,” it is because they relate to years of the planet Venus; that is, to synodic movements of this star, and they do not constitute a cycle in the calendar of the aborigines.

In fact, Mr. Palacios is right; the quintiduos of the *Piedra del Sol* represent synodic movements of the planet Venus which, having an approximate duration of 584 days, would be equivalent to five movements, i.e., to 2,920 days, representing the duration of eight solar years, whence the movements of both celestial bodies make a cycle every eight solar years, and, accordingly, the 260 points of the quintiduos of the fourth zone of the *Piedra del Sol* are equal to 416 solar years.

Now then, the zone of quintiduos of the *Piedra del Sol* has a chronologic value precisely equal to the tonalámatl of the Borgia Codex, or, to express it better, it is a tonalámatl that represents 260 synodic movements (not years of Venus), and, consequently, 416 solar years, or one indigenous age. Mr. Palacios is in the

right in denying that this zone is the "cecenpohualli," a name for the tonalámatl serving as a ritualistic calendar; but he is in error in not granting this as regards the tonalámatl, for this is *precisely* its appropriate name, and by extension only did the Náhuans give it the name cecenpohualli or ritualistic calendar, since its 260 diurnal symbols did not have for their purpose the representation of the computation of light from any star, being used solely in connection with things calendarian because of its mythical importance.

A demonstration of the truth of this affirmation is given us by the Borgia Codex. In the tonalámatl, which appears in that Codex, the symbols are not grouped in thirteenths but in quintiduos, that is, in groups of five symbols and, as we have said before, are not affected individually by any numeral, as happens in the case of the ritualistic calendar; but each of these groups of five symbols exercises an effect and is, in turn, itself affected. This gives us a clear conception of the uniformity of chronologic value furnished by ideograms that, despite their variableness in execution, embody, essentially, the idea of the cycle of Venus and the Sun, and of the five synodic movements corresponding to eight solar years. The correctness of this interpretation is clearly revealed: each of these ideograms represents the moment when Venus and the Sun, after their first five apparent movements in position-change and the second eight of their apparent movements around the Earth, are seen to be, in the cycle, in the identical position with respect to the Earth that they occupied upon the termination of the past cycle, eight years before. Logically, we must admit, in consequence, that the symbols of the tonalámatl grouped here in quintiduos relate also to the synodic movements of Venus; and in this case the word tonalámatl has indeed a perfect application, since it refers to the cyclic computation of the light of the two celestial bodies.

But there is something more conclusive still for the demonstration of the truth of this assertion: many of the ideograms to which we have referred that have a chronologic value equal to five synodic movements or eight solar years represent two celestial bodies—the Sun and Venus—and furnish the basis for the cyclic

calendar, and these ideograms are formed by an arm and hand, the latter grasping an arrow symbolic of the light of the sun, a double arrow symbolic of the light of Venus, the beautiful astral twin, the star of the morning and of the afternoon, and still another arrow perfectly characteristic. The interpretation in this case is manifest; in this cycle three computations coincide. Moreover, corresponding always to this third arrow, we see in the ideograms adverted to, alternating with the five numerals corresponding to the synodic movements of Venus and the eight numerals relating to the eight solar years of the cycle and affecting in conditions of equivalence the quintiduos of symbols of the tonalámatl, representative of synodic movements of Venus, several ideograms in which, in diverse fashionings and varied form, appear clear and unmistakable thirteen numerals. The fact that, on repeated occasions, these numerals figure in the ideogram of the cycles and with the symbol of the light, corroborates our idea that they relate to a celestial phenomenon repeated thirteen times, while the synodic movements have occurred five times and eight solar years have elapsed. What is the significance of this mysterious thirteen in this cyclic computation? The answer is found in a study of the movements of the planet Venus which the Náhuans understood so thoroughly. The thirteen numerals are thirteen Venus years, that is, thirteen revolutions which Venus has made around the Sun in executing five movements of apparent position-change or synodic movements—real and apparent movements which Venus executed in the space of eight solar years.

Five synodic movements; eight solar years; thirteen Venus years: here we have the astronomic significance of the number thirteen, fundamental in the chronology, since the "five" is derived from the harmonious movements of the "beautiful astral twin," Venus, personification of the favorite deity of the Toltecs, coordinators of the unsurpassed Náhuán chronology. We have here, in my opinion, the incontrovertible demonstration of the significance of the ideograms of the Borgia Codex.

One point remains to us for solution. Why did the Náhuans employ as the "perfect" cycle the indigenous age of 260 synodic movements or 416 solar years, and not some other cycle? The

answer is so simple that it will be altogether satisfactory. We have seen that, calendrically, the civil and ritualistic computations formed a cycle at the termination of each group of fifty-two years, but only at the end of a "huehuetiliztli" of 104 years did the calendarian cycle coincide with the astronomic cycle of Venus and the Sun. This coincidence, however, was not sufficient, inasmuch as it lacked a most important ritualistic concordance which took place only at the termination of each age, as Enrique Juan Palacios explains in his *Piedra del Sol*:

At the same time the figure 151,840 (the number of days in 416 solar years) has the notable quality—unnoted to this day so far as we know—that, being multiple, with a unit difference, of the numeral nine, the characters of the tonalámatl (called Quecholli or Attendants of the Night) embody in themselves a complete operative entity, since on the final day two characters are superposed, in accord with the usual practice of those who had directive power as regards this book. As we have seen, only at the termination of the indigenous age had all of the calendarian concordances taken place

Moreover, in the calendar containing 260 symbols the sacred numbers came into play, inasmuch as 260 is the product of the multiplication of 4 by 5 by 13, and the 416 equivalent years may be grouped also, as, indeed, they were, by virtue of the sacred numbers, into four "tlalpili" of thirteen years which twice repeated in the age the sacred number four. And there is more yet. By means of an exclusively calendarian combination, of great simplicity and incomparable harmony, the calendarian cycle of 260 symbols could be used only in the form of a ritualistic calendar, inasmuch as each symbol or synodic movement of the tonalámatl comprised 584 days, being equal, taken together, to 151,840 days, and, consequently, the 260 symbols repeated 584 times could elapse in an age signifying days, being different solely from the peculiarities of the tonalámatl, equivalent to synodic movements, by virtue of the numerals of the series one to thirteen which affected them and which, repeated twenty times, gave to the numerals the very important collaboration of the sacred numbers 13, 4, and 5. The calendar thus formed served, by reason of the sacred origin of all of its elements, to regulate the religious festivities, on which account it was called cecenpohualli or cemilhuittlapohualiztli; but as by virtue of the indefinite succession of this

ritualistic calendar, due to its cyclo-astronomic origin, final concordances could be worked out—the computations of the synodic movements of Venus, of the Venus-years, and of the solar years—they called also, by extension, the 260 daily symbols of the ritualistic calendar *tonalámatl* or *tonalpohualli*.

This is the reason for the utilization of the age of 260 synodic movements, 416 solar years, and 676 Venus-years as a perfect cycle in the Náhuán chronology; and such are, in my view, the astronomic and mythic origins of the *tonalámatl*-calendar (cyclic, astronomic and sacred); and of the *cecenpohualli*-calendar, (ritualistic), foundations both of the Náhuán chronology.

Although the subject of corrections is important enough to merit an especial study, I shall refer to it here, in concluding, though briefly.

We have said that at the termination of each group or minor cycle of fifty-two years, the Náhuáns refrained from counting thirteen days with the object of reconciling their civil calendar of 365 with the astronomic calendar. And, though in this regard there is difference of opinion, I incline to the system espoused by Sigüenza y Góngora and other authors of weight, at least so far as concerns the Toltecan people, authors of the Náhuán chronology, in the first place because it is in perfect accord with the religious spirit which represented the norm of the calendarian science of this people, in view of the manifest mythical importance of the number 13; and, in the second place, because the correction did not apply with respect to the tropical year of 365 days, 5 hours and 48 minutes, but as regards the sidereal year of 365 days, 6 hours and 9 minutes, due to the relative position of the Sun, Venus, and the Earth that governed their astro-chronologic calculations, the correction being of thirteen days, notwithstanding the difference of 2 days, 14 hours and 24 minutes, which on the termination of the age, remained to be corrected—the system which presented fewest possibilities of error.

As the revolutions of Venus around the Sun consumed 224 days, 16 hours, and 49 minutes, and her synodic movement 583 days, 22 hours, and 6 minutes, the five synodic movements

of the cycle took place in 2,919 days, 14 hours and 30 minutes while the thirteen revolutions thereof were equal to 2,921 days, 2 hours and 37 minutes. That is, Venus had five synodic movements, traversing her orbit thirteen times, less a fraction in her final revolution, which it would have to cover in 1 day, 12 hours and 7 minutes, there being in consequence each eight years of the cycle a difference of 1 day, 12 hours and 7 minutes between the movements, one real and the other apparent, of the planet. But, as this difference relates to position only and absolutely, it is not likely or probable that the Náhuans had been able to appreciate it, assuredly depending upon their astronomic observations and, for their chronologic requirements, being governed by the relative position, i.e., the place occupied by Venus in space in relation to the Sun and the Earth, or, say, the cyclic situation resulting from the synodic movement or from the apparent position-change.

Now then, since the five synodic movements comprise 2,919 days, 14 hours, and 30 minutes, and the eight civil years of the cycle 2,920, a difference results of 9 hours and 30 minutes every eight years, easily rectified with respect to the calendar. But since the Náhuán calendar had as its astronomic basis the cyclic movement of two astral bodies, and there being a difference, though slight, between the duration of the cyclic movements of Venus and the Sun, as between them, and also as regards the calendar derived from them, and calendarian rectification being only possible with respect to but one of these celestial bodies, the Náhuans chose the Sun, as we have seen before, as the immutable norm of their time.

At the termination of the cycle the astronomic concordances of the movements of Venus and of the Sun did not coincide in consequence with respect to the date of the calendarian cycle. This inevitable anomaly, since its origin was a real difference in time, lacked prime importance for the exactitude of the time computation, since it was obtained with absolute precision by means of solar calculation; yet it did have great mythical importance. It is unquestionable that the priest-astronomers were able to remedy this in some ingenious manner, and though I have not

yet encountered anything reminding one of this concrete case in the indigenous paintings, on the other hand we do have sufficient data to justify the belief that they were able to rectify this error, refraining from calculating, till the termination of each age, the 16 days necessary to initiate their new computation in the succeeding heliacal rising; or, and this is more probable still, refraining from calculating twenty days in order to begin their calculation the first day of the next heliacal setting.

In this manner they were rectifying, at the same time, the difference of 2 days, 14 hours, and 24 minutes between the civil calendar, now rectified by the thirteen intercalary days of the minor cycle, and the sidereal year. These days were certainly computed separately in order not to lose chronologic exactitude, and were doubtless dedicated on their ritualistic occasions to solemn and special religious ceremonies.

Apart from this, the rectification did not pass from theory to reality, since the unhappy life of the aboriginal nations assuredly did not permit them to put this system of rectification into practice; some other nation, in that migration of peoples from the North toward the South, forced out the indigenes from their cities and their fields; some deep-rooted religious system or internecine strife dispersed nationalities, paralyzing all life and, naturally, interrupting the chronology. When the dispersed groups had again organized and formed new nationalities, the new computation of time began on an astronomically propitious occasion.

MEXICO CITY,
MEXICO

SOCIAL LIFE OF THE ESKIMO OF ST. LAWRENCE ISLAND¹

By RILEY D. MOORE

GENERAL ENVIRONMENT

THE ISLAND of St. Lawrence is located in Bering Sea, about one hundred and eighty miles south of the Arctic Circle, forty miles from the Siberian and a little over one hundred miles from the nearest point on the Alaskan coast. It is from twenty-five to thirty-five miles in breadth and eighty-five in length. The interior is mountainous, reaching an extreme altitude of about fourteen hundred feet; the rest is a relatively flat tundra. In places the surface is very rocky, rough and irregular. Lakes and small streams of fresh water are numerous. Much of the country, both in the high and in the low lands, is marshy, making travel by land very difficult in the summer, the feet sinking from four inches to a foot into the wet, spongy soil at every step. The coast line is irregular and the shore in many places precipitous. Some low sand spits project into the sea, and have always been the favorite village sites of the natives. The climate is disagreeable during the summer; rains are frequent and hard, strong winds blow much of the time, several successive days of sunshine are very rare, and there are dense morning fogs. The summer temperature reaches about 40° Fahrenheit or a little above, 56° being that of the warmest day, July 8th, in the summer of 1912. Winter may set in any time after the middle of August. The first snow in the winter of 1912-13 fell on August 30. In October the thermometer stood between 20° and 26° during the day, dropping somewhat

¹ The writer visited St. Lawrence Island in 1912 under the auspices of the Smithsonian Institution, in its interests and those of the Panama-California Exposition, San Diego, 1915. With one exception the illustrations are from photographs taken by the writer and he wishes to extend thanks to the Smithsonian Institution for the use of them.

Acknowledgment for valuable assistance is also due to Dr. Walter Hough and my good friend, Dr. John R. Swanton, the editor of this JOURNAL.

It is to be understood that the description of the St. Lawrence Islanders here given applies to the period above indicated.

lower at night. Strictly speaking there are but two seasons, summer and winter, with about three and one-half months of the former and eight and one-half of the latter and with the change from the one to the other generally quite sudden. The approach to the island is sometimes blockaded by ice until well into the month of June.

The winters while long are not excessively cold, but those in which 30° below zero, Fahrenheit, is the extreme temperature are said to be fairly common, though occasionally there will be a colder season. A mild winter is to the natives a "woman-winter" and a severe one a "man-winter." Sudden changes in climatic conditions which often prove disastrous to the health of the community are common at all times of the year.

FORMER SUBDIVISIONS AND GOVERNMENT

In 1912 there was but one village of importance on St. Lawrence Island. This was built upon a sandspit which forms the northwestern extremity of the island. It was called Sēēvuookôk (Chibukak on the maps) by the natives, and the inhabitants of the village were known as Sēēvuookôkmīt. On Southwest Cape there was a small settlement of nineteen people, Powōeluk, and at the reindeer station, Camp Collier, about forty miles to the eastward of Sēēvuookôk, another village, the population of which varied with the seasons. In summer there were often as many as forty at this place. Sēēvuookôk, with a population of somewhat more than two hundred, was composed of the remnants of what were once five different clans, the Wallit being the original owners of the village site. Of the other inhabitants, part came from Southwest Cape; from an old village a few miles to the eastward of Sēēvuookôk came the Murrktumit and from still farther to the eastward came the Nungoopugah'kumit, while the Avhrumah'rumkut or their ancestors came from Indian Point, forty miles away on the Siberian Coast. Except for the latter clan the natives believe themselves to be autochthonous.

Tribal lines no longer have much significance among them. Their present political organization might be considered as a loose confederation of small autonomous groups or patriarchally

governed families. These groups are composed of two or more male relatives with their families, all of whom live in the same house. In all matters of community government, the old men, "strong men,"² sorcerers, and boat captains have much influence, but little positive authority. The St. Lawrence Islander's habits of life are regulated by the unwritten laws of custom and tradition which he seldom contravenes, except to obey the stronger laws of necessity and self-preservation. But, should he choose at any time to be a law unto himself, there are none with authority to command that he do otherwise; however, in extreme cases, if his actions are considered inimical to the better interests of the community, the influential men of the island decide what action will be taken and, willing or unwilling, he must accede to their demands. But it is seldom necessary to resort to strenuous punishments. From various references to chiefs in their folk tales, it appears that the present form of government, or rather lack of it, is comparatively recent.

CLOTHING

In their clothing, both beauty and utility come in for due consideration. The combinations of furs of various colors and varieties, or of bird skins of various sorts, often show excellent taste and much skill. Generally speaking they wear tight clothing in summer and loose in winter. With them "right side out" means "fur side in" but according to whim or fancy clothing may be worn one way one day and the other the next. In pattern it is in some respects like that worn by Eskimo elsewhere, but it approaches nearer and, in some cases, is identical with that of the coast tribes of northeast Siberia.

The men wear coats or parkas which are slipped on over the head much as one would put on a closed shirt. These are made of reindeer skins or the breasts of birds. The former may be made with a hood attached, or without like those worn on the Siberian side. All are cut square around the bottom and reach about to the knees. While hunting or working, the coat is generally bloused and belted down. The hoods are bordered with a strip

² See p. 363 f.

of dog fur which keeps the wind out and protects the face. The cuffs of the birdskin coats are strengthened by binding with a strip of hair seal skin.

To protect the skin clothing a snow-shirt, or, in bad weather, a raincoat, is worn over the parka. These are made from the intestines of the seal or walrus which have been soaked, scraped, inflated, and dried. Those intended for snow-shirts are beautifully bleached by freezing, aided by the action of sleet. In the snow-shirts and raincoats worn by the men the raw seams and stitching are on the outside of the garment while they are hidden in those of the women. The hoods are bound with a narrow strip of brown leather and kept snug about the face by a drawstring. In the snow-shirts are often inserted small gores of brown leather, or they are ornamented along the seams with the crests of the crested auklet. Sometimes tassels (probably devil chasers) made from the fur of the unborn seal, dyed a dark walnut brown by boiling with bark, are sewed on in rows. These decorated snow-shirts are frequently used as ceremonial regalia. Muslin, calico and ticking obtained from traders are now used considerably for snow-shirts. In pleasant weather this garment is often omitted.

The men wear close-fitting pantaloons made from the hair seal, fur cut. These are cut extremely low in the waist and reach to the ankles with draw strings at top and bottom. Under these, as drawers, in winter, is worn another pair of similar pattern made of reindeer skin and worn with the fur side next to the body.

The summer boots are made from the hair seal, fur in; the soles are of young walrus hide or the hide of the big hair seal. The outsides of the bootlegs are painted with red clay which is also used on the backs of reindeer skins dressed for clothing. The regular boot reaches to the head of the fibula but shoes are often worn. By way of ornamentation cut leather designs are sometimes sewed on the boots, strips of white leather or wisps of long reindeer hair are welted into the seams, and the ankle straps may be striped with deer hair. For the winter boots, reindeer skin is preferred. They are made up with the hair out. The tops are often adorned with bits of fur of different colors cleverly pieced together. Inside of the boot a layer of dry grass is placed to protect the foot. In cold weather socks of reindeer fur are also worn.

The coats worn by the women are similar in pattern to those worn by the men but are nearly always made of the breasts of the crested auklet, while the men wear skins of the cormorant, murre, puffin, both crested and least auklet, old squaw, and eider. The last-mentioned are considered too warm by the young men. In summer the women wear close-fitting trunks of hair seal ornamented at the bottoms with the white deer-leg skin and a stripe of dog fur runs up the back of each leg to converge on the seat. The principal winter garment, which may also be worn sometimes in summer, is the *kōhlŭvŭk* identical with those worn by the women across the channel on the Asiatic coast. This is a baggy, loose-fitting garment of reindeer skin composed of a low V-necked, wide-sleeved shirt combined with knee bloomers. The little girls sometimes wear these the year around.

Newborn babies wear a *kōhlŭvŭk* of a different pattern made from the skins of the seagull, feathers in, removed from the bird without splitting the skins. Strands of grass are sometimes welted into the seams to strengthen them. Sleeves and legs are closed at the ends. A whole bird skin serves for each sleeve and leg. Older infants wear similar garments of deerskin with broad standing collars. Sleeves and legs are also closed at the ends, but there may be a transverse slot in each sleeve to permit the putting out of the hand. The child is slipped into this garment from the top as if dropped feet foremost into a sack. Over the head is worn a hood similar in shape, if not in materials and decorations, to those worn by American white children.

Considered from the standpoint of hygiene, the only practical changes which could be suggested would be the addition of easily washable underwear and the use of less clothing in summer. It is a notable fact that travelers in the north find the attire of the Eskimo far more suitable to the climate than that of the white man. The St. Lawrence Islanders are victims of the superstition so common among whites that an excess of clothing is a prophylactic against colds.

Clothing is seldom discarded until entirely worn out and in the meantime it has generally become very dirty. Old trouser legs are often utilized for boot tops, and portions of other discarded clothing come handy for other purposes, for nothing is ever

thrown away which might at any future time be of possible use. New or cast off clothing of the whites is sometimes obtained from passing ships and is proudly worn on pleasant summer days to be quickly laid aside on the approach of bad weather.

In this connection a few observations on means and methods of personal adornment are of interest. Some men and boys crop the hair, but with others the shaven crown or monkish tonsure is the favorite style (Fig. 53, right). This latter style, and also that of the single long tuft on the crown seen in two cases on the island,



FIG 53.—St. Lawrence Islanders. The name of the girl is Moowhok. The man, Koningok, has the characteristic hair cut.

are distinctive of Siberian influence. With the tonsure a few locks four or five inches in length are sometimes left at the back. The women wear two braids and part the hair in the middle, and a few bang the hair squarely across the forehead. The young women plait strings of beads into the hair, leaving a long free end to each string which is either fastened with a button high up in the braid (probably recently adopted) or is tied into the pierced ear by a leathern string (Fig. 53, left). The older women often keep the hair back with a narrow leather thong tied about the head. For decorative purposes, or for amulets, narrow straps ornamented

with beads, dogs' canine teeth or small ivory carvings are worn by children and adults. Sometimes these are worn about the neck or waist or obliquely over one shoulder. Wrist, ankle and leg straps bearing a bead or two are also worn.

Tattooing with soot is general but far more extensively practised by the women than the men. Because of the painfulness of the process it is not uncommon to see women with unfinished designs on face and arms.

Elaborate designs are tattooed on the cheeks and arms of many of the women. Two slightly diverging lines run from high up on the forehead down over the full length of the nose. A series of broken lines running, some horizontally and others vertically, across the chin are seen on many. A longitudinally divided pattern composed of bilaterally asymmetric designs is often tattooed on the back of the hand and the wrist, occasionally reaching above the elbow. Two women each had a small crudely made human figure on each side of the forehead near the hair. A similar marking was also noted on one man. That much of the tattooing has a certain symbolism about it was learned, although part of it was put on with no other idea than that of ornamentation. Part of the latter was the work of children crudely done upon themselves. A young man is marked with two small dots near together at each shoulder, wrist and elbow, the cervico-dorsal and lumbo-sacral articulations and at the knee and ankle (the hips being represented by the lumbo-sacral tattooing) after first acting as pallbearer, striking a whale or killing a polar bear, all important events in his life. After having been once so marked he *may* never be re-marked even if subsequent events entitle him to this distinction. An old man was marked with the familiar triangular-bodied figure of a man at the cervico-dorsal articulation. Inquiries elicited the information that this was put on after he had been saved by a friend from death on a floating cake of ice. A tripartite figure of symmetrical design was tattooed near the "anatomical snuff-box" in several young men. This was afterward discovered to be a conventionalized "whale tail," a symbol of good luck, which the writer believes to be the origin of some of the designs on the arms of the Eskimo women of which apparently this is the elementary figure.

A line passing obliquely downward and outward from each angle of the mouth was noted in one young man. There is probably a symbolism connected with these lines, for ones similarly placed are painted with a graphite and saliva paint in the ceremony known as É'vüük.

DWELLINGS

The St. Lawrence Islanders formerly lived in houses which they called "ningloos," the driftwood floors of which were four or five feet below the surface of the ground. These were one room structures from twelve to twenty-five feet across, approximately square and approached by a long, narrow underground passageway about twenty-five feet in length. These underground tunnels were so low of roof that one must stoop or go on all fours to enter the living room. The outer entrance to the passageway was, if not placed on a sidehill, protected from the drifting snows by a small shed built of poles, standing upright, and to enter the passageway one must let himself down through a hole in the floor of this shed. The walls of the passageway and living room were most often of driftwood, though at times they were rip-rapped with stones or walrus skulls. Four upright posts of wood or bones of the whale placed in a quadrangle supported the roof of wood and sod, in the center of which was a smokehole or ventilator, covered, when not in use, by the scapula of a whale. On one or two, occasionally three, sides of the room were constructed sleeping platforms or bunks raised about a foot above the level of the floor. These were six or eight feet wide and varied in length according to the number of persons they were intended to accommodate. Sometimes there were two bunks on the same side of the room, one placed above the other. In a few ningloos sleeping rooms were excavated underneath the floors of the living rooms.

At present the people of St. Lawrence live in houses built entirely above ground (Fig. 54, *a*) and in form closely related to the Chukchee dwellings except that the latter generally have side walls built of hides or sometimes of earth. Commonly the house is constructed in the form of an oblong octagon, the walls being made

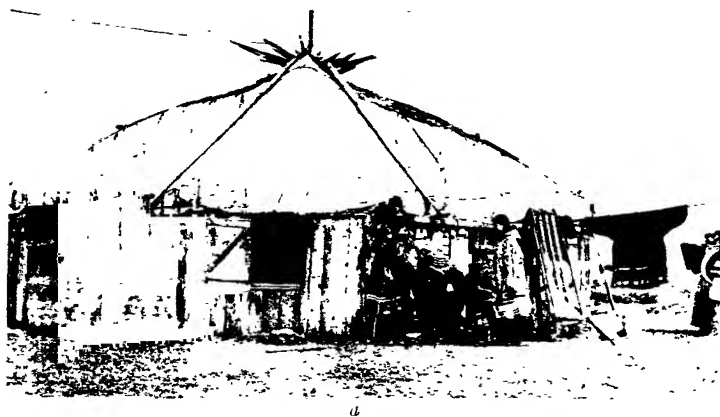
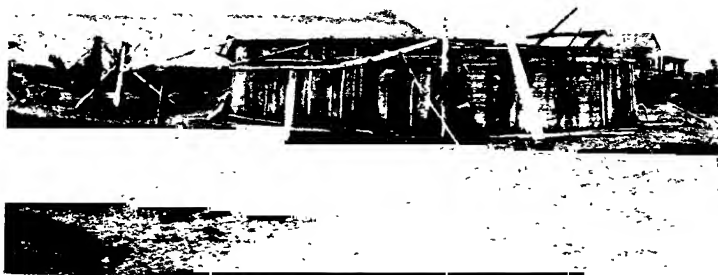
*a**b**c*

FIG. 54.—St. Lawrence Island houses: *a*. Winter house. Okonoli, the oldest inhabitant, leaning on a cane; *b*. A “broken house.” Womkon (Deceiver) standing in foreground. *c*. Ogchoolki’s summer house and storage rack. Walrus meat drying on poles. A “lumber house” in the background.

by standing slabs of driftwood about seven feet long up on end and chinking the cracks with moss and wood. Two upright posts support a short ridgepole which runs longitudinally and is much nearer the front than the rear of the house, while in the larger houses shorter posts are ranged about these in quadrangular form to furnish further support for the roof. The ridgepole is not used in the construction of the smaller houses. The rafters are either tied to the ridgepole or clustered well forward of the middle of the roof and bound together with walrus hide thongs. The upper ends of the rafters are allowed to project a foot and a half or more above the roof which is covered with walrus hides, tightly stretched and held in place by bones, driftwood poles, old ship fittings and stones tied to their edges or to thongs passing over the roof. As these houses have no windows, new walrus hides are preferred for the roofs as they transmit the light more perfectly than do the old ones. There is one small door in the end of the house facing the sea, the sill of which is about two feet above ground to prevent the snow from obstructing the entrance. The water-washed gravel of the sandspit is the floor.

A living room or "ogrut" is constructed inside of the house and in this they sleep, and in cold weather spend the greater part of their waking hours. These are seven or eight feet wide and from ten to eighteen feet in length. Walrus hides stretched over poles form the back and end walls and the flat roof of the ogrut, the ceiling being about six feet above the floor. Over all a thick layer of dried grass is fastened to help retain the heat. On the floor is spread a large walrus hide from which the hair has been removed and on the ground running the full length of the ogrut in front is a pole of driftwood which serves the double function of sill and pillow. Across the front of this room is suspended a curtain of reindeer skins with the fur side out. Near the top of this are one or two small holes five or six inches in diameter which serve as ventilators on those rare occasions when they are not covered. As these are the only openings in the curtain, to enter the ogrut one must lift the curtain and crawl under. Once inside, all remove their clothing, for the temperature ranges from 80° to 100° Fahrenheit and with the heavy clothing of the Eskimo this would be

unbearable. In the ogrut the older members of the family generally wear a loin cloth, or trunks made of deerskin, but the children go as naked as on the day they were born.

Of the furnishings about an Eskimo home little can be said, for they are very simple. In the outer room may be found all sorts of buckets, kettles, tubs and trays, some of native manufacture, others obtained from the traders. These are in a decidedly filthy and malodorous condition and are often heaped high with the flesh and entrails of seal or walrus. One or two small packing boxes, or in some cases an ordinary trunk, serve for the storage of all sorts of things from clothing and fishing tackle to tobacco, tea and ship biscuit. Clothing, bits of fur, amulets, ornaments and all sorts of things are stored in "Eskimo trunks," each made of the whole skin of a seal removed after splitting transversely between the fore flippers. On pegs driven into the walls are hung dog harness, coils of walrus and sealskin ropes, guns and harpoons, while littered about is all sorts of junk, for the Eskimo hoards everything against the day when it may be of some use. I have noticed that many whites in the far North, where contingencies of all sorts may arise, also readily fall into the same habit of accumulating that which would be consigned to the rubbish heap in this part of the world. In the ogrut the articles of furniture are few indeed. At the back and ends are placed large platter-shaped lamps which furnish the heat and light. These are filled with blubber with dried moss for wicks. This burns with a clear, steady, intensely hot and smokeless flame and furnishes a light which is soft and agreeable to the eyes. Over one of the lamps may hang a boot dryer with a cooking pot suspended from it or against the ceiling may be a frame with a skin stretched in it to dry. There are no tables or chairs for they need neither.

During the month of July many of the families move into summer houses which they occupy until the latter part of September. The winter homes, just described, are "broken," that is, the ogruts are taken down and the roof is removed (Fig. 54, *b*). The summer house is constructed from the rafters and walrus hides which composed the roof of the winter house. The summer house is much smaller than the one occupied during the winter; it

has perpendicular walls and a shed roof made by stretching walrus hides or pieces of old sailcloth over a framework of poles (Fig. 54, *c*). Inside of the house one or two small sleeping tents or ogruts are made from deerskins sewed together and suspended from the rafters by rawhide thongs. These are often folded back out of the way during the day for the summer ogrut is used but little for other than a sleeping room. The summer ogrut is made with the fur inside. A few of the islanders have tents of canvas which they have procured from the traders. In these they live during the summer making a small sleeping tent inside. A few of the natives have frame houses, very simply but substantially built with double floors and walls interlined with building paper, but they move into the native houses built of hides and driftwood as soon as cold weather begins. The height of a man's ambition is to have a "lumber house" but as building material brought in by traders is very expensive, costing at least three times what it does in the states, it is needless to say that few of them have frame dwellings.

The houses are all built facing the west as the entrance is then protected from the severe easterly and northeasterly winds. Sanitary conditions are far from what they should be but in many ways are as good as possible under the existing conditions, some of which will probably never be changed. That the air becomes unspeakably foul in the ogruts can readily be imagined but in that part of the world, where fuel is so scarce and the cold so bitter, this condition is largely unavoidable. When the raw cold winds blow out of the Arctic, heat is the first consideration and little thought is given to ventilation. The foulness of the air is increased by the ammonia arising from the urine tubs and hides in process of tanning, which at times seems to irritate the eyes, if not the nostrils. To remove the hair from hides they are dampened with urine and rolled up in the warm ogruts for a few days. The resulting fermentation readily loosens the hair but the effect on the atmosphere is bad indeed. Pups are raised in the house that they may have better care and sometimes the old dogs are allowed inside.

There is, in most of the houses, no provision whatever for privacy. The calls of nature are generally answered without thought of the presence of others. Refuse and trash of all sorts, carcasses of dogs, spoiled food or worn out clothing are thrown into the holes where old ningloos formerly stood, or an old meat cellar which has outlived its day of usefulness is used for the same purpose. The long periods of intense cold undoubtedly mitigate the evils ordinarily attendant upon such a procedure. Taking the general conditions about the villages they cannot be called bad, judged by the standards of that part of the world, and the village of Sēēvuookôk was in 1912 one of the best kept in Alaska. It was upon a broad sandspit which not only made a very clean floor for the dwellings but furnished excellent drainage as well, neither of which is true of the old cave-like ningloos, often built in ground which was never thoroughly dry. There are two or three of the frame buildings occupied by native families during the summer which would compare favorably in neatness with homes of the whites in this part of the world. This leads one to believe that perhaps some of the dirt and disorder about many of the homes would disappear if it were not next to impossible for it to be otherwise, considering the circumstances under which they live. Ungwiluk's home had a "Please-you-wipe-your-feet" sign scrawled upon the door and, while but few of those who entered could read, all had been made to understand and heed. In the native houses, while dependent chiefly upon blubber and driftwood for fuel, it will be impossible materially to improve hygienic conditions about their homes. Experience has proven that in decent dwellings the St. Lawrence Islander readily responds to this improved factor in his environment. And while the barbarian of the North has long been notorious for filth, still when the unavoidably cramped quarters, the necessary frequent preparation of greasy and bloody meats and hides, the difficulties attendant upon bathing, the nature of the clothing and the lack of sanitary facilities generally are considered, one is led to believe that civilized man might not do much better in such an environment. And nowhere on earth could it be more forcibly impressed upon the observer than in the stern and barren North that man

is most certainly in large measure a product of his environment.

Food

Needless to say, in a climate so inhospitable as that of St. Lawrence Island the vegetable portion of the diet is almost negligible as compared with the quantity of meat consumed.

The seal and walrus take first place in their fare. These and other meats are stored in the *suclō'uk* or blubber cellar where, so the writer was informed, even through the warmest season of the year, it can be preserved in good condition for a period of three months. But it might be stated here that what these people consider "good condition," would fall far short of our standards. One of these meat cellars was visited and a description of what was seen may help to make clear the inadequacy of present methods of food storage. No attempt will be made to describe the awful odors which often arise from these places and pollute the atmosphere for a quarter of a mile to leeward when they are first opened.

Early one morning a woman was seen going to her *suclō'uk* with a small wooden tub on her shoulder to procure a supply of meat. Having been curious to learn what one of these places was like I hastened after her. Arriving at the cellar, I called down to the woman, who was already at work, and then let myself down through a hole about twenty inches in diameter into the cellar, my feet touching bottom about four feet below. After becoming accustomed to the darkness I looked about and discovered that I was standing on a narrow dike of earth about a foot wide which was near the center of a figure-of-eight shaped room approximately fifteen feet in length. The walls were rip-rapped with walrus skulls and blocks of stone which were damp, greasy and covered with mould. Overhead, the sod roof was supported by whale bones laid across from wall to wall. Where I was standing the side walls were about three feet apart but diverged toward either end of the cellar. In what might be termed the two compartments of the cellar the floors were lower by at least a foot than the dike in the center. To the right was a pool which covered the whole floor of that compartment with stagnant water on

which was floating a heavy layer of oil. Lying in the water were what appeared to be two pokes of blubber. To the left, the floor was covered with large chunks of meat which appeared to have been wrapped with skins but which were so foul with slime and mould that no attempt was made to verify appearances. Upon a couple of these stood the woman with both sleeves rolled up to her shoulders. She grinned at me good-naturedly, much amused at my curiosity, and went on with her occupation of fishing the day's rations from out of one of two casks of seal oil which stood at the end of the *suclo'uk*. Simultaneously becoming aware of a new and more foul odor and a soft gurgling, hissing noise I discovered that the woman had stuck one heel through the surface of a chunk of meat (apparently the carcass of a small seal) upon which she was standing and the escaping gas was what I heard and smelled. She again grinned at me and chuckled at my discomfiture but seemed to have no personal concern about the malodorous mass beneath her. After a hasty survey of the situation, I called back "good bye" as I quickly retreated through the hole in the roof.

But the St. Lawrence Islander prefers the wholesome fresh meat to that in which decomposition has begun and has learned by dear experience that many of his severe digestive disturbances can be traced to the consumption of decaying meat. However, his game may get very high before it becomes at all objectionable to his tastes.

The flesh of the walrus is consumed in large quantities. Much of it is cut into strips and hung across poles to dry in the open air. This jerked meat is eaten both raw and cooked.

During a successful whaling season large quantities of whale meat are consumed and some is stored for future use, to be eaten both cooked and raw. Portions of the extremities of the whale's flukes are saved to be eaten at the celebration of *Kamuk'tock* and the thicker central part of the flukes is used at sacrificing time. The whale "gum" is considered a great delicacy and is held to be sacred food by the hunter who struck the whale.

Probably all have eaten dog but, except in seasons of scarcity, the dog is more valuable alive than dead.

Birds, which are very plentiful during the summer, are an important and very palatable part of the diet. These are generally eaten soon after they are caught but occasionally are preserved after cleaning by dropping them into barrels of oil where they remain until desired for use. Fish and other meats may also occasionally be preserved by the same method. Salt is not used as a preservative, neither is it popular as a seasoning.

The crested auklet in the summer and the Pacific eider in the fall are probably eaten in greater quantities than other birds though the sea gull, cormorant, puffin and murre are also eaten. Much relished as articles of food, when roasted, are newly hatched birds, which are extracted from crevices in the rocks by means of long sticks with sharp hooks attached to one end. Of the fish used, the principal ones are the cod and tomcod, sculpin and salmon, many of the latter being caught in the river near the reindeer camp. Crabs, many of which are caught in the spring, are also used. Reindeer meat is liked and eaten when available but cannot be considered an important article of diet, even at the reindeer camp.

Their culinary art has not been developed to a very high standard of perfection and the average white person would not only consider most of their viands unpalatable but in some instances decidedly disgusting. Yet it is surprising, in the case of foods as with many other things, how familiarity with them will alter one's viewpoint. Meats of all sorts are sometimes eaten raw but the usual method of preparation is by boiling, sometimes along with a little seasoning. Several varieties of seaweed, including kelp, are gathered on the beach. These are dried to be cooked later with meat, making a thick stew. Birds' feet are sometimes dried and hung about the house in long strings to be eaten in the winter if food becomes scarce.

The vegetable diet, in addition to the seaweeds and kelp just mentioned, consists chiefly of the leaves of plants and a few small roots, eaten both cooked and raw. Vegetable foods, obtainable only in limited amount and variety, are greatly relished, the taste for them at times apparently amounting to an actual craving. The writer has seen Eskimos pounce upon a little patch of small

tasteless berries which grow upon the island, seeming unable to pick and eat rapidly enough to satisfy their appetites. *Nūnē'vūk* is a small plant, the leaves of which are gathered and ground, mixed with water, and allowed to ferment. Ahslit is made by adding seal blood and cooking the mixture. *Nūnē'vūk*, fermented, frozen and ground, is sometimes mixed with snow and blubber. The *plom'uktuk* (*plomuktut*, plural) thus made is considered quite a delicacy. The leaves of a plant called *kōkōng'ūt* are also ground and mixed with seal blood in summer or blubber in winter. *Kōkōng'ūt* leaves are sometimes steeped to make a beverage which is quite popular when tea is scarce.

Most of the "white man grub" such as beans, rice, dried fruits (especially raisins and dates), canned beef, sweets and preserves are relished and eaten whenever obtainable. During the summer of 1912 a trading schooner arrived with a few apples, lemons, and oranges for which they readily gave many of their hoarded treasures. Some are very fond of onions. Cheese and ice cream were eaten "with long teeth." The sweetened condensed milk is relished by old and young, and infants are often fed upon it when it is to be had, but they do not like the evaporated, unsweetened milk. In some families, especially where there are small children, bread is becoming an important article of diet. For the children, they want such food as is eaten by the whites whenever they can get it and for themselves, when ill, the first wish is for white man's food. Pilot bread is always in great demand. A few of the women have learned to make baking powder bread which is baked on both sides in large flat loaves after which it is turned out on the floor to cool. "Mazinka" bread is also made here by mixing a dough of flour, water and baking powder, and frying large flat chunks of it in hot seal oil after the manner of frying doughnuts. After one becomes accustomed to the strong odor and taste of the oil this is a fairly palatable bread. As yet most of them have not learned the use of corn meal and other of the coarser and more nutritious flours.

They drink large quantities of snow and ice water even when the most excellent lake water is easily obtainable. Tea is the favorite beverage. Large kettlefuls of it are made and some

of them drink it by the quart. They appreciate and prefer good tea but drink anything that is tea. The English Breakfast is the popular tea but, when this or something better is not obtainable, they use the "tchi" or Russian brick, a very inferior grade obtained in trade from the Siberian natives. Tea is often boiled until it is red, strong and very astringent and drunk without milk, as they nibble at a cube of sugar or hold one in the mouth. A few drink coffee but tea is preferred.

At meal time, which is fixed by the inclinations of the family rather than by the clock, a large wooden trencher, sometimes three or four feet in length and about a fourth as wide, is placed upon the floor and around this the diners sit crosslegged. A woman at one end of the tray cuts the meat into small bits with a mincing knife and scatters it in little heaps over the tray that it may be convenient to all. Each helps himself with his fingers. When they have finished a bowl of water is passed by a woman in which each rinses his fingers, wiping off his lips with them while still wet. The fingers are then dried on a towel or a wad of soft dried moss or grass sewed together with grass. Then the tea is passed and, if bread is to be had, it is eaten with it. Often when lunching alone a strip of dried walrus or other meat is held by one end in the teeth while a knife, wielded dangerously near the nose, is used to cut off each bite.

In this connection the story of the great famine of 1879-1880, as told to me by Oghoolki, one of the old men of the island, is of interest. He knew little of the famine in other places beside Sēēvūookôk (now Gambell) but probably what he said of this place will hold true in a general way of the other villages although of the others there are now no survivors to tell the tale.

During the summer a large quantity of whiskey was obtained from some ships which came to the island, and there was little hunting done because the men were drunk a great deal of the time. During October they began to suffer for food, and were able to procure very little until the following April. The younger boys did not drink much whiskey and they did what little hunting they could. The people became like hungry dogs and cared for nothing but food. If a man returned to the village with a seal after a hard

day's hunt all would rush at him and take it from him. When food became scarce a few of the strongest men walked to South West Cape and traded whiskey for food.

A man came to visit the village from a place the other side of Kukulik and in the night someone killed his dogs and ate them and he was unable to return home that winter. No one thought or cared for anything but food and they would fight and scuffle over a bit of meat not even caring if they were killed in getting it.

Oghoolki drank no whiskey and he and his brother used to trap foxes and were able to ward off starvation by eating this meat. Before getting too weak to walk he went to South West Cape and traded his coat for food, which apparently did not become scarce there until later in the winter.

The stronger men went to hunt out on the ice and some of them were so weak they were unable to return but dropped on the ice and died there from cold and exhaustion. Sometimes a seal or walrus would be killed and in their hurry to get some of it to eat men would fall into the water and drown. Boots and dog-harness were eaten, while the walrus hides they removed from the roofs of the houses, and the raincoats made from the dried intestines of the seal and walrus were cooked and eaten also.

All became "so thin that they seemed to have no bellies" at all. If a hunter should get any game he was able to bring home only a small part of it because in his weakened condition he could not carry heavy loads as they ordinarily do. There were very few deaths until spring when food was more plentiful and easier to get. A man came in one day and said he had killed two walruses. A little was given to every family, but as all began to get enough to eat they gorged themselves, for "while their bellies were full their mouths were always hungry." Being too weak to assimilate such quantities of food, deaths followed rapidly from acute indigestion. In their weakened condition they were unable to take the dead to the cemetery so that many of them were merely dragged outside or even left in the houses.

When I asked if any of them became so hungry that the children were eaten I received an emphatic "nucka" (no). My informant then told me that a white whaler who visited the island

the following spring had asked him why they hadn't eaten some of the women, and told him that "woman was good food." Oghool-ki's comment was that the whaler was a very bad man. He said that for many years after the famine the people were very careful to have a good supply of food stored for winter, but in the last few years they were forgetting and becoming careless.

There is a story current among them that at one time food was so scarce that when a walrus was killed on the ice the hunters would take off their mittens and, rolling them in the blood, would soon have a large ball of frozen blood to take home. I heard this story several times but it is apparently a tradition relating to times when the island was thickly populated, long before the famine of 1879-1880.

OCCUPATIONS

Along with food, clothing and shelter, the occupations of a people determine to a considerable degree their physical development and welfare. The St. Lawrence Islander is very versatile. He is not only a good hunter and a clever trapper; considerable mechanical skill is shown by his work in ivory and iron. It is the writer's opinion that in the use of the gun his marksmanship would hardly equal that of the white man who had had a similar amount of practice but in trapping birds and such four-footed game as the island affords he displays exceptional ingenuity. He has invented quite a variety of traps for catching birds. Large open nooses made from shreds of baleen are used in various ways and are quite effective. Some of these are fastened to the rocks, others are baited and partly buried in the sand while still another form consists of a yam-shaped weight of walrus hide filled with clay, and to this are attached three large loops of whalebone and a long rawhide thong. This is thrown into a flock of birds on the wing and is quite effective when skilfully used. A large hoop-net attached to a pole about fifteen feet in length is used to catch birds in much the same manner as we would use a butterfly net. The birds are sometimes tied through the nostrils to a long line and fastened across a rock, the row of live birds acting as a decoy for more of their kindred. When the hunter is ready to depart for

home the birds are killed, generally by biting in the back. The bird bolas, with five to seven large walrus teeth or bits of ivory as weights, is also used. Since the advent of the shotgun these methods are not practised to the same extent as formerly. Modern steel traps are used by many of them to catch the foxes and squirrels which abound on the island but traps of native make, working on the principle of the twisted thong or the bent whalebone spring are also employed. The younger generation are not good seamen and cannot be persuaded to venture upon the sea except in the very calmest of weather. They catch a great many fish with the modern hook and line or ivory hooks with bits of the red skin from duck feet sewed over them for bait. Several of these are fastened to a line of scraped whalebone.

Whales are caught by harpooning and tying inflated pokes to the harpoon lines to impede the swimming and prevent the whale from diving. It is then killed with a bomb from the darting gun or the shoulder gun. Until a few years ago the whale was killed with the lance. This was composed of a flat, slate head, sharpened on a stone and the edge hardened with oil, fastened to a pole about fifteen feet in length. The whale was struck just back of the flipper. In pleasant weather during the summer several boat crews go in company to bring back driftwood for summer fuel and to make sleds and canoe frames or repair the houses.

As a carver of ivory the St. Lawrence Islander often displays considerable skill and artistic ability together with an exceptional sense of symmetry. He cannot execute, or rather he has not hitherto executed, any work like that of the King Islander and some of the natives on the mainland, but it is probable that this is not from lack of ability so much as lack of opportunity to get suggestions from the whites, which is largely responsible for the high development of the ivory-carving industry in some parts of Alaska. The writer has seen some very handsome paper weights, letter openers, drawer pulls and door latches which were made by the St. Lawrence natives.

A few Eskimo are engaged in reindeer herding at Camp Collier, to the eastward of Sēēvuokôk, but as a general thing this way of gaining a livelihood does not appear very attractive to these

people. The mechanical ability of the natives is well shown by the skill with which they fashion bits of scrap iron, old files, broken saw-blades, etc. into spear points, skates, and cutting tools of all sorts, some of which, in both design and temper, would do credit to the average white mechanic.

In carrying heavy burdens they are quite remarkable. A raw-hide thong is laid double upon the ground and the load placed across it with the two free ends of the thong in front. The doubled portion of the thong is drawn across the top of the load and the burden-bearer sits on the ground pulling this over his head while the free ends are brought up, one under each arm, and caught through the loop in front of the chest. The free ends are grasped with one hand and the bearer is either helped to his feet or turns over on all fours and rises without assistance. Both speed and endurance are displayed in the long cross-country trips which are made by the men, walking and running over rocks, loose gravel or marshy tundra, sometimes with heavy loads of game or driftwood on their backs. To be strong is perhaps the highest ambition of the men and with that object constantly before them much time is spent during the pleasant summer days in foot-racing, jumping, and lifting large stones.³ Near an abandoned village on the north shore of the island are two large cairns built of heavy stones gathered from a space several acres in extent. To build these meant many days of very heavy labor for some man, who did it, so the writer was informed, to develop his muscle and leave a monument to his industry. Near another deserted village, Kukulik, is a trail extending for a considerable distance along the mountain side. It is about a yard wide and, in many places, as much in depth. It runs through an extensive field of large broken boulders and in building the trail hundreds of these were moved at the expense of a great amount of labor and time.

Household duties do not allow the women a great deal of leisure. There is food to prepare, skins to dress and a great amount of sewing to be done, for the woman must make clothes for the entire family. She is very dextrous with the needle, sewing both rapidly and well, pushing her needle toward her with the

³ More will be said on this subject under "Sports and Amusements."

index finger and using for snow-shirts and raincoats the thread obtained from the traders, but in making coats, boots and other clothing which must stand hard wear, she uses sinew thread of her own spinning. This is made by picking the dried sinew into shreds; these are moistened at the ends with the lips and spun into a strong smooth thread by twisting over the cheek or the back of the hand. In sewing, graphite is sometimes applied to the thread.

The women make the lamps (noneck) by mixing clay and sand with water, moulding into shape and allowing to dry for about three days. They are then baked and painted with seal blood. The sacred gum pots, and formerly pots for cooking food, were made in the same way. Their pottery is not strong and very easily warps, cracks, or crumbles.

That the St. Lawrence women are quite skilled in dressing skins is demonstrated by the beautiful white seal leather and some of the tanned deerskins which they produce. But often they are very careless in dressing them, believing it easier to sew on a patch than to exercise care in the scraping.

Some of them are quite skilled in basketry, making very substantial coil baskets. These are not decorated in any way.

The gathering of leaves and the digging of roots for food devolve upon the women. Sometimes the young men assist in gathering the grass to reinforce the ogrut walls or in getting the moss for lamp wicks. Trading is mostly done by the women.

GENERAL HABITS

From what could be learned it appears that the time for retiring and rising in the winter months is not unlike our own, but during mid-summer when the only night is a couple of hours of twilight about midnight while the rest of the twenty-four hours is light, their habits are very different. The long pleasant evenings are considered the most enjoyable part of the day and friends visit, hunting and fishing parties remain out, or little groups gather to gossip, seldom returning before midnight or even two or three in the morning, rising at noon or a short while before on the same day. The children often play out until long after their parents have retired for the night. In fact both children and adults appear

to follow their own inclinations in this respect regardless of other members of the family.

Soon after rising, the women prepare the day's provisions, going to the *suclo'uk* for the meat supply, to the lake for water, or to the beach to tap the perennial ice supply which furnishes their favorite drinking water.

The men may be served breakfast before rising, eating with their fingers from a platter placed in warm weather, just without the *ogrut* so that only the head and bare shoulders are exposed to the cooler air of the outer room; an early caller, who generally enters unannounced, is sometimes greeted by a row of naked men, women and children, sticking half-way out from under the curtain to converse with their caller who, having his clothes on, may remain in the cooler and more comfortable outer room. In cold weather the caller goes into the *ogrut* and removes his clothing.

Diurnal time has but little meaning to these people. There is a clock of some sort, procured from the traders, in nearly every home, but the timepieces in the village will be found not to agree by several hours. A clock appears to be only an interesting piece of furniture in the majority of homes, one in which pride is taken much as in the case of a fine piano or a large library in some American dwellings, exhibited with considerable satisfaction but appearing to serve no useful purpose. On the other hand the islanders calculate changes of the moon and the seasons very well indeed.

Bathing takes place at long and uncertain intervals. Those questioned were unable to swim, which is naturally to be expected in a part of the world where one seldom gets into the cold water except by accident.

With the men, life is made up of intermittent periods of indolence and hard labor. On the whole they are rather industrious. The women are busied most of the day with sewing, tanning and the preparation of food. Considerable time is given to sports and ceremonies, and singing and dancing.

During the month of July many of the houses are "broken" and the families remove to some other part of the island where fishing is good or seals are plentiful. The walrus hides and poles

from the roof of the winter house are taken along to build the summer home unless the family should be fortunate enough to possess a tent. In from six to ten weeks the family returns, puts the roof back on the house, sets up the ogrut, cleans out the blubber cellar and places new sod over it to protect it from the severe winter weather, which is soon upon them in all its Arctic fury.

There are few pleasure trips taken unless there is also a prospect of adding to the supply of food or fuel.

Kissing, as we know it, is not a custom among them, but rubbing the sides of the noses together gently is a common and much enjoyed practice between men and women who are attracted to each other, and there have been some fierce fights because some hunter, returning home unexpectedly, discovered his wife rubbing noses with a neighbor. In this connection it is interesting to note that in several cases, more commonly among the men, the skin over the alae of the nose and the adjacent cheek was found very sensitive to a slight touch, i.e. ticklish. This was first discovered in taking the measurements of the nose which in a few instances was not an easy matter because of the dilating and other movements of the nostrils. Afterward the writer experimented on quite a number by tickling gently with the finger tip after the nasal measurements had been taken. While this skin area is very sensitive in an occasional white person it is undoubtedly more so in these people. The fact that tickling is a sexual stimulant is quite generally recognized and it appears that the St. Lawrence Islander has developed a sensitiveness at the side of the nose to a degree not common among American whites. The sexual stimulation resulting from the practice of nose-rubbing is probably due to the action of the physiological law that all skin surfaces near to the junction of skin and mucous membrane are in greater or less degree sexually irritable.

SPORTS AND AMUSEMENTS

On pleasant days during the summer, as has been said, the men often occupy themselves with sports of various sorts to develop their strength and endurance, for to belong to the aristocracy of

"strong men" is a desirable goal. And in a land where the struggle for existence is so fierce and only the strong survive, where long and arduous hunting and fishing trips are but part of the daily life, where many nights are spent in the open with no protection but the ordinary clothing while wind, fog, rain or snow envelop the outdoor sleeper, and where heavy burdens of game or drift-wood are carried upon the back over loose gravel or marshy tundra, he who is not strong cannot take his place among the even moderately successful members of the community, and many times the difference between strength and weakness means the difference between life and death.

So there is a reason why much time is spent in foot-racing, jumping, wrestling or rock-lifting together with other sports of lesser favor among them, such as tests of strength between two individuals or performing upon a horizontally stretched rope. At Sēēvuookôk there is a track of nearly two miles over the sandspit, and often parties of fifteen to thirty may be seen running upon this track, at a steady gait, each aiding his progress with a running-stick.

Wrestlers strip to the waist. The successful contestant squats upon the ground and waits for a successor to his vanquished rival. Often fifteen or more may take part in an afternoon's bout. Arm-holds predominate and their wrestling is not fraught with the dangers incident to wrestling among us.

Those who excel in wrestling, running and lifting are known as "strong men" and may be identified by the trousers worn, there being a strip of white deer-leg skin around the bottom, and a stripe running up the back of each leg made from the bark-dyed hair of the unborn seal and the long white neck-hair of the reindeer (Fig. 55). Strong men are not expected to die a natural death, but in case of incurable illness are strangled by the use of the *kōmīl'sklh̄yē* or strangling pole and a piece of rawhide rope, or if the strong man prefers he is shot or stabbed. These methods of ending the troubles of all incurables—generally at the patient's own request—were formerly quite common.

Dancing and singing are favorite amusements. There are two varieties of dancing practised, the one (probably ceremonial)

which is always danced in the same manner and to the accompaniment of the same tunes, the other of movements and pantomimes invented by the dancer with the sole purpose of entertaining the spectators. The women usually keep both feet planted firmly on the ground, bend the knees to a somewhat squatting posture and then perform a variety of contortions with the trunk and neck and motions with the arms, all the while keeping time to the music. The men pat time with one foot, while the weight of the body is supported on the ball of the other, meantime turning



FIG. 55 —Three strong men. The one at the right end was born in Siberia of Chukchee and Choochow (Koryak) parentage.

from side to side, reaching the arms in various directions, or sometimes injecting into the dance absurd movements of head and arms to the merriment of the onlookers. One very difficult and at the same time very absurd and laugh-provoking movement is to quickly dart the head forward or to one side, keeping the eyes on a level with the horizon. The dancers, usually from one to three at a time, take their positions in front of the orchestra, the members of which sit in a row. At the largest dance attended by the writer the music was furnished by seven young men, one of whom

was supplied with a drum, five with empty five-gallon kerosene tins and heavy sticks, and one with two blocks of wood. The members of the orchestra hammered vigorously upon their instruments in perfect time and unison and occasionally a musician would rise to his feet that he might let fall heavier blows with his stick or drum. With facial muscles drawn tightly, jaws nearly fixed, and throat muscles tense they sang loudly and perspired profusely, while, at more or less regular intervals, the time would quicken and the volume increase as the dancer, perspiration oozing from every pore, twisted, posed and stamped his foot to the accompaniment of the music. When the dancers began to lag in their movements the orchestra ceased, to give them a few moments rest. If one of the performers became too warm he would strip to the waist, but he must never dance without gloves on his hands "because we have always done that way." Dancing is often a very good test of the endurance of the performer and increases materially his muscular development and suppleness.

Nearly everybody is able to dance and sing but many are so bashful that they seldom participate except among members of their own household.

In pleasant midsummer weather the small boys often gather in little knots on the lee side of a dwelling and sing their quaint songs while elsewhere similar groups of men may be seen with arms drawn inside their parkas, gossiping and telling stories. Practically all, both young and old, can sing--and all enjoy it immensely--but they cannot whistle. "Our mouths too stiff" was the reason given by one young man. The writer, who is a very ordinary whistler, has often been surrounded by spellbound groups of Eskimos, sometimes numbering a score or more who were entertained by whistled bits of everything in his repertoire from old hymns and ragtime to Eskimo tunes. Within a few weeks some of them were beginning to whistle, much as would the American small boy.

During pleasant weather all spend much time in the open, enjoying the fresh air. The women go outside to do cooking and sewing when the weather will permit, and it will permit these

northern women to sew out of doors at temperatures which would cause the average white woman's fingers to stiffen with cold.

There are several outdoor games of various sorts which are participated in by the boys and young men but space will not permit a description of them here.

MARRIAGE

Marriage conditions have probably been considerably changed from what they were when the island was more populous and there was a closer approach to equality in numbers between the sexes. It is probable that the wishes of the young people are more respected now than formerly, due, in the main, to white influences.

At present the girls usually marry soon after puberty, though there were several unmarried girls between the ages of 16 and 21 when the writer was on the island. However, with one possible exception, these were engaged at the time. There was one unmarried woman past thirty, but as she had the well-deserved reputation of being a shrew, it is not improbable that she will remain unmarried throughout life. Among the men, marriage usually takes place at about the same age as with ourselves, but the males would probably marry at an earlier age were it not for the fact that there are more of them than of the females. A young man of about thirty told me he hoped to be able to make a trip to King Island soon to get a wife. There are two men who have two wives each and formerly, when there was less disproportion between the sexes, polygamy was common, as it is today among their close kin who live across the channel at Indian Point, Siberia

one man there being the possessor of six wives. After the death of a married man, his brother is expected to marry the widow and care for the family. In marriages of this sort, there is often marked disparity in the ages of the husband and wife. Marriages are usually arranged by the fathers of the young people, the boy's father calling upon the girl's, taking with him a substantial present. If all is satisfactory the young man goes to live at the girl's home and works for her father, usually for a year, but sometimes much longer. If at the end of his probation he is considered a desirable son-in-law, he is allowed to take the young

woman to his home and she becomes his wife. The writer could learn of no marriage ceremony. On the other hand, if the young man is not pleasing in the eyes of the girl's father he must return to his home without either wife or compensation for his one, two or three years' labor. A widow often becomes the wife of a man, who may or may not be married already, simply by going to his home to live at his invitation. This also applies to a girl who has been left an orphan. It was formerly an occasional practice for a man to steal the wife of someone in a neighboring village. Furious fights often resulted between the two men because of it, and at times their respective villages were involved in bitter wars. It is said that the woman usually preferred to go with the victor.


The women are generally well treated. In the few cases where husband and wife cannot agree a separation results. The writer learned of two such, in one of which the husband was an orphan and hence became homeless, and for this reason the woman and her father ultimately permitted him to return. Generally speaking, family dissensions have about the same origin as among ourselves, though the various factors are not active in the same degree. Chief among them might be mentioned meddling parents, failure to provide for the family, sterility and sexual incompatibility, and jealousies, which seldom arise without good and sufficient cause. In their folklore, in regard to which the writer gathered much interesting information, and which depicts "the doings of our grandfathers" and reflects in a great measure the general habits of thought of these people, one often meets tales of liaisons and of quarrels between husband and wife or between a man's two wives. The marriage tie is, however, fully as stable as among the whites and probably more so.

MORTUARY CUSTOMS

When a death occurs the deceased is bathed from foot to head by an old female relative. He is then dressed in his best deerskin clothing, put on wrong side, i.e. fur side, out, then wrapped in deerskins which are held in place by a rawhide rope bound about the body from head to foot in a series of half-hitches. A stick of wood about the length of the body is then slipped under the rope

along the front of the corpse. Eight pieces of rawhide rope, with a loop for a handhold in the end of each, are then tied to the binding cord to serve as handles for the eight pallbearers.

The members of the deceased's family turn their clothing wrong side out and sprigs of mint are bound under their noses by two stems of grass passed under the ears and tied at the occiput.⁴

Formerly when a death occurred in the village all children, except those belonging to the family of the deceased, were painted on their faces with a red paint-rock brought from Siberia. A short mark was made above each eyebrow and a large half-circle with the middle portion extending across the forehead and the extremities down over the cheeks, a short mark extended diagonally downward and outward from each corner of the mouth and  was painted on each cheek. This was done to keep death away and was a custom of Siberian origin.

Part of the personal effects of the dead are broken at the home or at the village limits while part are carried to the grave and left there.

When the corpse is removed from the house strands of grass, made by knotting three pieces end to end, are tied to that part of the binding cord which is about the neck while the free ends are passed up over the face. The body is carried feet forward to the edge of the village where it is laid upon the ground. The relatives then cut the strands of grass to signify that all ties between them and the dead have been severed. Then the body is dragged to the graveyard by the eight pallbearers. They are accompanied only by an old man, or by an old woman if the corpse is that of a woman, whose duty it is to undress the body at the grave where it is left entirely nude.

In winter the corpse is left upon the snow but in summer it is laid out upon the ground and a ring of stones in the form of an ellipse is placed about it. One grave in an old cemetery was examined where the dirt and stones had been scooped out leaving a shallow pit in which the body was deposited and then covered with stones. It is the writer's belief that this practice was formerly quite common.

⁴ Knud Rasmussen, in writing of the Greenland Eskimos, says: "The left nostril is plugged with straw when any one dies, this is done to secure a long life. The nostril only remains plugged as long as the funeral ceremonies are going on."

At the grave the ropes are severed, the clothing and deerskins cut into shreds and all are scattered about on the ground. There, also, the things used by the person during his illness are broken. Implements used in hunting and fishing, and the toys of children, are left at the grave. A bead or two, a bear's tooth, or a weight of an old bolas worn by the deceased to prevent sickness are left at the grave and sometimes placed under the headstone, or, if the corpse is that of a woman, her mincing knife. Ivory harpoon and arrow heads, deer-horn spoons and ivory ice picks were formerly often placed under the footstone, but this practice is not so common today.⁵

The pole which was used on the corpse, to keep it in a fixed position while being dragged to the grave, is placed with one end under the footstone, and a foot or more back of this another stone is laid beneath the pole so that it does not lie flat upon the ground but points upward at an angle. With this pole they often placed a spear, a canoe paddle, or, in those cases in which the deceased met death by strangulation, the gallows-stick or komilschye.

After the ceremonies at the grave, which often differ somewhat in detail, the pallbearers return to the home of the bereaved family where a fire of kindlings is made in front of the house. Each of the pallbearers then places his feet alternately in the blaze for a moment, probably to purify himself, after which the head of the household brings the piece of rawhide rope, of which part had been used to bind up the corpse. A piece of this a foot and a half or two feet in length is given to each of the pallbearers who, immediately upon his return home, ties it to one of the supporting posts of his storage rack. The subsequent tattooing of the pallbearer has already been mentioned.

The members of the family now take off the mint which was bound under their noses, but they do not leave the house for five days nor remove their hoods except in the ogrut.⁶

⁵ Deer horns were often placed at the graves of Indian Point natives who died on the island.

⁶ In pleasant weather or in the house the hood is generally slipped back off of the head.

Among the Greenland Eskimos "the persons who have had to do with the corpse must remain quiet in tent or house for five days and nights They must not take

After five days the family visit the grave to view the remains and learn what animal has been eating the corpse, for the St. Lawrence Eskimo believes that in the next life—he expects to have five in all—he will become that animal which first eats him.

Upon the return of the family to their home the clothing is again turned right side out but they continue to keep the hoods upon their heads for another five days.

As a sign of mourning both men and women sometimes wear a bead in the front hair. A strand of the hair is pulled through the bead and tied.

MENTAL AND MORAL CHARACTERISTICS

Our impressions of other races are controlled largely by the circumstances under which we are thrown in contact with them or by the fact that we judge all by the few individuals with whom we have been most closely associated. And again, to the white man they often reflect those traits which have characterized the civilized men with whom they have come in contact, and these of course tend to obscure their real character. Many observers approach a people strongly imbued with their own ideas of right and wrong and firm in the belief that the present standards of civilization are the ideal of perfection and suitable to all races and environments. In consequence they unconsciously radiate a spirit of criticism which is readily detected and closes the door effectually to an insight into the true character of a people. Others in turn lack the imaginative powers and sympathy necessary to approach, in the least degree, the viewpoint of the other man; they may know, but do not seem fully to realize, that the other race is actuated by much the same necessities, desires, ambitions and emotions as their own. The writer makes no claim to having altogether risen above the imperfections noted, but he has attempted to do so. Attention is called to them, not to criticize other observers, but that the reader may take cognizance of the fact and make due allowance for the personality of the observer.

off their clothes at night or pull back their fur hoods On the five days following upon the burial, at sunrise and sunset, they must go up together to the grave and go once around it in the same direction as that of the sun's circuit of the heavens " Knud Rasmussen)

and the writer finds that his impressions of these people differ in some respects from those of others who have come in contact with these and other Northern tribes from time to time.

The St. Lawrence Islander is of a cheerful, sunny disposition which seems remarkable when we consider his comfortless home and the nature of his telluric environment. He is jolly and quite given to good-natured teasing and banter wherein he can both give and take with zest, but rebuke or ridicule he cannot stand. He cannot be termed lazy, but he will not drive himself to do labor in which he takes no interest, as the white man often does. While hunting, fishing, trapping or gathering driftwood, his labor is frequently very arduous and he endures many hardships. He is friendly and sociable, visits and is visited a great deal. In pleasant weather, both day and night, may be seen little groups on the lee side of the houses, visiting, telling stories or singing their drum songs. Hospitality in the home is freely given and expected in return. As a rule the St. Lawrence Islander is improvident but there are many exceptions to this which will bring the average somewhere near that of our own race. It is the writer's belief that the improvidence of the Northern native has been somewhat exaggerated, because the often dire consequences of it bring it so forcibly to our attention. If he were as improvident as we are often led to believe, the race would have been extinct before its discovery by the white man. His environment will not permit of it. Generally speaking he is an ingrate; regardless of past favors he will demand pay for the least service he may perform and will freely impose upon one's good nature to the limit, but he seems to feel no resentment if an emphatic stop is put to his impositions. However, it appears that this applies only to his intercourse with the whites, is a natural result of his past relations with them, and cannot necessarily be called a racial trait. Altruism being one of the latest and rarest acquirements of our own race we cannot expect it and do not find it in much evidence among these people. Patience and care are characteristic of the St. Lawrence Islander.

Timidity is a common trait of the children and young women; this also applies to some of the young men. The children get along well together, spending much time in one another's company, play-

ing their simple little games or singing their songs. Only once during the writer's stay on the island was a children's quarrel seen, a record which he never expects to see equalled in a white community where a like number of children are as much thrown together.

Honesty in its various phases is not all that might be desired, yet conditions are not bad, and on the whole I believe the passing generation is superior in this respect to the younger one. With a few exceptions they are truthful, theft is not common, and other than that of a little candy and a fountain pen no cases were brought to my attention while on the island; the pen, and probably the candy, was taken by a child. Among themselves the property rights of others are generally scrupulously respected. On the other hand a promise means absolutely nothing to any of them. A St. Lawrence Islander may keep a promise if it will in no way inconvenience him to do so, but not otherwise. This was found to be one of the greatest and most constant sources of annoyance while working among them.

The St. Lawrence Islander is very fond of his family. He spares the rod, but this does not seem to spoil the child. The older members of the family, especially fathers and older uncles, are treated with extreme reverence and respect, accorded them because of their age and the wisdom garnered from years of experience. To make a request of an old man is not common, to give him advice, the height of impertinence, and to command him unthinkable.

Generally speaking the native loves his wife and treats her well, but in some cases it may be his neighbor's wife whom he loves and he often sees no reason for concealing the fact. The sexual life of these people at first strikes one as extremely loose, but on further consideration the writer is inclined to temper his judgment considerably in this matter. Initial impressions will invariably give one an exaggerated opinion of the extent of their immorality. Belonging to a "natural" race free from the restraining influences caused by fear of social ostracism or the condemnation of public opinion, and with ideas of modesty and

propriety different from our own, the St. Lawrence Islander makes no great effort to conceal his sexual life. The civilized white observer often passes judgment upon the uncivilized after comparing only the *manifest* immorality of the two races, apparently innocent of the true condition among his own people. These Eskimo are on the average not so far below our own race in morality as in the matter of concealment. While the percentage of immorality among them is greater perhaps than with us, still an unbiased comparison would give us a better opinion of these people than one would get from the few published references to them. Marriages are sometimes based on mutual attraction, sometimes not, but it may develop later; in any case, necessity is the greatest factor. A man must have some one to make his clothing and prepare his food, he must have children to care for him when he grows old. Marriages are arranged by the parents, at times with due regard to the wishes of the young people, at others directly contrary to the wishes of each; in the latter case especially the matrimonial sea is often troubled. As in some other Arctic and sub-Arctic communities there is an excess of marriageable males over females. The young men and women are not allowed to associate so freely as among ourselves—there are no long walks or picnic parties—but nevertheless love affairs spring up between them. Some have learned to write and little brothers are often seen scurrying back and forth with letters written by lovesick boys and girls. Hot blood runs in the veins of these Northern folk and loves, jealousies, disappointments and intrigues are to be found among them as among those more civilized. Considering all of the facts just enumerated, and that this race is as free from the inhibitions of civilization as any of the natural races, also the close commingling of the sexes and the lack of privacy in the home, necessitated by unalterable environmental conditions, the sexual life of these people becomes understandable. The stimulating effects of a straight meat diet and the irritation of the sexual organs which often accompanies intestinal indigestion, so common among them, are also factors worth consideration in studying their sexual life.

If there is gambling among them no instance was discovered and, while the writer would not say that there was none, it is not practised to a very considerable extent.

On the whole it might be said that these people are possessed of many very likable qualities, and during his short stay on the island the writer became much attached to them. They have many virtues and their faults might better be called weaknesses which harm no one so much as themselves, while those factors which have made most for their moral and much for their physical degeneration have been introduced from without.

WASHINGTON, D. C.

SOME PROPERTY CONCEPTS AND MARRIAGE CUSTOMS OF THE VANDAU

By MELVILLE J. HERSKOVITS

THE VANDAU, a tribe of Portuguese East Africa, are of interest because of the resemblance of many of their customs to those already noticed by Junod among the Thonga, their neighbors to the south, by various writers among the Zulu and Kaffirs, who live to the west and southwest of the Vandau, by Smith and Dale among the Ba-Ila of Northern Rhodesia, and by Stannus and others among the Wa-Yao of Nyassaland. The information contained in this paper was furnished by A. K'amba Simango, a native of this tribe and a student at Columbia University, who has set forth in great detail the concepts and customs remarked below in the course of a number of extended conversations with the writer during the past year.

The government of the Vandau consists of a chief, sub-chiefs under him, and head-men over the individual kraals. The office of chief is hereditary, passing from father to eldest son, and the chief is the ruler of the tribe. The sub-chieftainships are also hereditary, in the main, but a sub-chief may be removed by his superior for cause, and in this case the successor is appointed. The headship of the kraals is not hereditary—if a man establish a kraal, he is considered its head, but, if he should die soon after its establishment, the next eldest brother becomes head-man. The son of the original head may take charge if he is thought sufficiently capable, but as far as could be gathered the “human element” enters into the selection, and the man who is generally thought the most capable naturally assumes charge of affairs at the death of the former head-man.

When an individual comes into the country to settle, there are two courses open to him. If he wishes to settle in a kraal, he obtains the necessary permission from the head-man of that kraal. If, however, he wishes to establish an independent settlement, he must obtain the consent of the sub-chief of the district

in which he wishes to settle. In the first case, after he has been accepted, he may start a garden on any of the unoccupied land near the kraal in which he settles. In the latter, land is assigned to him by the sub-chief, usually near the kraal he has established, though it may be at some distance from it. This land is his as long as he uses it. It is even his as long as he claims it, and even if he does not make actual use of it no one else may touch it without his permission, provided he has once cleared it. If he has settled in a kraal, the land assigned him by its head is his property; if he has established a kraal, the land of that kraal is looked upon as his, and he is regarded as grantor of it to those under him, and has the say to whom it shall be given. The land which the members of a kraal may take for their gardens depends, first, upon the extent to which the land surrounding the kraal has been taken up by earlier comers, and, next, upon the distance between the kraal and its neighbors. If these are close together, only a few persons may have gardens between them, while, if they are farther apart, everyone may have his plot comparatively near the kraal in which he lives.

If a man moves away from the spot where his garden was, or very evidently deserts the land he has worked in the past, it becomes what may be termed open or public land, and reverts to the head-man for reallocation. The original owner loses all claim to it. Thus, if he has planted banana trees, anyone may have the fruit, while if another person later settles on this land, and the original owner takes fruit from the trees he himself planted, he may be prosecuted for theft. However, a man need not necessarily cultivate all the land to which he lays claim as owner. If one cultivates during the first year a garden which occupies only a portion of the allotted land, but continues to extend it from season to season as opportunity permits, he may mark out a place as the ultimate limit of his garden, and no one may use any of the land between that mark and his garden, even though it be untouched as yet by the claimant. In this, as in everything else among the Vandau, the element of reasonableness must be taken into consideration. The people of a kraal in which there is scarcity of land would not tolerate for a moment the appropriation of more land

in this way than a man might be reasonably expected to use in the course of two or three seasons of extension. The sale of land is unknown, though a man may, on moving elsewhere, give over the rights to his garden to a friend.

Once the grant has been made, the chief who makes the grant relinquishes all right to any direction over the land he has allotted. He may not tell the man who works the land what he must do with it, nor may he demand rent in kind. There are certain instances, it is true, in which religious reasons induce persons who are working land to give of the first-fruits of their produce to the chief. These, however, are freewill offerings, and are not demanded. When hunting is indulged in, the chief has the right to certain portions of the game, usually the head. Hunting land is in no way restricted. Anyone may hunt anywhere, the only provision being that there must be no hunting of game on cultivated land, as this would constitute trespass, and the trespasser would receive a beating from the owner of the land if he persisted in his trespassing after due warning had been given him, while he would be compelled to restore in kind any produce he might have damaged. The sending of the head of the animal slain to the chief is more in the nature of a recognition of the power of the chief than tribute, according to the information given.

All grazing land is free. It is usually situated some distance from the kraal, since the land closer in is occupied by gardens under cultivation. It is not the case, among the Vandau, that each kraal has its district, within which any member of the kraal may take his cattle to graze. All the land not cultivated is free to anyone, and a person may take his cattle wherever he can find the best pasturage for them. The same holds true in the case of fishing rights, and the only case in which these might be restricted is one in which a man might have many gardens completely surrounding a small lake. Even in this event, however, the Vandau would regard the lake as free, but access to it being over privately owned land, he might not exercise his right without committing trespass. However, in the case of the rivers and larger pools anyone may fish without asking permission. Trespass is punished by a beating, or, in case anything is damaged, by payment in

kind. The person whose land is entered has no right to kill the trespasser, and, if he does so, he is liable to be held and made to work for the family of the man he has killed, or to be compelled to pay blood-money in the shape of cattle and hoes to compensate them for their loss. Slaves were ordinarily taken in warfare, and, except in cases such as that just mentioned, the Vandau disliked to enslave members of the tribe if this could possibly be avoided.

The right of a woman to her garden is well established, and no one may interfere with it. The husband, of course, has the right to take food from it if he is hungry and needs it, but he may not give anyone else permission to take anything from a garden worked by his wife. Men have their gardens as well as the women, and in this case they may do as they please with the produce from the land they themselves have worked. Once a plot of ground has been allotted to a wife, however, the land and the results of her labor on it are hers, and the husband has no say as to what is to be done with it.

The Vandau are cattle-keepers, and regard their cattle as signs of wealth, as is the custom in almost all of East Africa. They are not the avid meat-eaters that their neighbors to the west, the Zulus, are known to be, and although cattle are occasionally utilized for food, this is not often, and is usually on some ceremonial occasion. Cattle are obtained by gift or by being earned. As a boy grows up, the elder members of his family, wishing to help him attain a good position in the community, will assist him by gifts of cattle, and in this way enable him to obtain those things which are looked upon as right and proper for a man of standing to have. If the young man is ambitious and wishes to increase his wealth, he may take care of the cattle of a wealthy neighbor, and is usually given a cow or two for his work. After a man is married and has daughters of marriageable age, they bring him more cattle as they are betrothed and married. Everything is privately owned, and communal ownership is unknown. It may be said, of course, that the ownership of land as sketched above might be termed communal, but it must be remembered that even this is regarded as ultimately being the property of the reigning chief,

and through him, of the sub-chiefs and head-men. As in the case of land, women have equal rights in property with men, though a man may exercise a certain advisory right over the property of his wives or sisters. Here, again, the element of the difference between principle and practice is to be noticed, for while a woman may have every legal right in the world to a cow, she would most probably never dream of disposing of it without first consulting her husband, even though there be not the slightest compulsion for her to do so. Although a woman may own anything a man may own, the general rule is that the members of each sex own those things with which they are most concerned. Thus, a woman would have no use for a bow and arrow, and would therefore not own them any more than a man might be expected to number household utensils among his possessions. It is seldom, also, that a woman is found who owns a dog; on the other hand, the ownership of the chickens, which are used constantly as food, usually vests in the women.

According to the information obtained, wealth is not the only determining factor in making for the position of the individual in a community. Indeed, it was maintained that it often happens that a man comparatively poor may be head-man of the kraal in which he lives. However, it is to be suspected that by "poor man" is meant an individual who has distributed his wealth among his wives, and who therefore owns his possessions only indirectly through them. Strength, on the other hand, is greatly admired, and the strong man is looked up to and if he has ability may rise to high position at the "court" of the chief. In the days before European occupation pacified the Vandau and made an army impossible, such a person might have risen to an important place in the army if he showed ability as well as strength.

A man may give as many cattle as he wishes to his sons or his wife, and in this case, as has been remarked immediately above, he relinquishes all but the most general control over them. Otherwise, they are his own property, and no one may interfere with whatever he may desire to do with them. Inheritance is in the male line. The eldest son of the first wife of a man, or the eldest son of the next if the first have no sons, gets the larger portion of

the estate, but the cattle are inherited in part by all of the sons. None is left entirely unremembered. If there are enough of the animals to constitute a large estate, the brothers of the deceased may also get a few head of cattle each, but the impression left was that all the sons must be taken care of first before this may occur. There is no such thing as a testamentary bequest known, and this is true, of course, of practically all of East Africa. The amount taken by each son varies with the strength of personality of each individual member of the family. It is quite conceivable, and, indeed, often happens, that a younger brother of strong personality and aggressive disposition gets much more than is considered his rightful share of his father's estate. Daughters do not inherit, according to the general custom. If they are old enough to inherit property, the Vandau feels that they should be married and under the care of their husbands. Since a husband inherits the property of his wife, the inheritance of property by a daughter who is married would mean that property would ultimately be transferred from her family to that of her husband, and this effectually bars her inheriting anything from her father. If the daughter is unmarried, she is considered to be too young to inherit property in any event, and is placed under the care of an elder brother or a brother or sister of her father.

As is the case with most of the natives of Africa, the Vandau have a fondness for submitting their disputes to regularly constituted native courts. The cases are brought before the principal chief where this is possible, or before his subordinates. A small fee is given the chief by the plaintiff when a complaint is brought, and there is no further payment of such fees necessary, this being all the person who passes on the case receives. A messenger is sent to the defendant by the chief, and is paid by the former for his trouble. The summons thus brought must be heeded, or he is brought by force to the court and fined for his negligence. Evidence is necessary for conviction—thus, in cases of adultery, the confession of either party to the act or the evidence of any eyewitness is necessary before a decision against the accused can be rendered. Each party to a dispute takes care of the conduct of his own case—that is, there are no persons who do this work pro-

fessionally for others, but the calling of the necessary witnesses, and the general direction of one's case lies in the hands of the person concerned. According to the information given as to the power of the courts, it is apparent that the religious sanctions do much to lighten their work, and the attitude of the Vandau toward the prevailing customs under which he lives is quite as much fear of the spirits who rule as of the punishment meted out by courts. Thus, though it is a punishable offense to steal, the most serious deterrent to committing this crime is the fact that a result would be incurring the wrath of the spirits who watch after the effects of the person who is robbed. Again, it is punishable to step in a spring from which many persons obtain their water; aside from common consideration, it is believed that to do this would be to cause the spring to become dry, and care is taken not to transgress the taboo. It is this attitude which makes for the enforcement of the law, according to Simango, to a much larger extent than the fear of courts and their punishment.

In the event that a young man wishes to get married, there are several ways in which the match may be arranged. In almost any event, the parents of both the boy and the girl have much to say in the matter, and if either family wish to prevent the match, they usually can do so by exerting the proper pressure. While the parents of the boy may object, it sometimes happens that he persists in marrying the girl whom he wishes for his wife, and in this case he leaves his family at his marriage, takes a new plot of ground on which to build his hut, and in this way starts a new family and cuts himself off to a large extent from his own relatives. It would seem somewhat more serious in the case of marriage in the face of objections on the part of the girl's family, for they will make it very unpleasant for her fiancé when he comes to pay her a visit, or later, after marriage, when he comes for her after she has been visiting her parents. Usually, though, if either party to the match insists on it strenuously enough, the parents will give in and grant their consent, for there is great reluctance among the Vandau to countenance anything which might lead to a break in the family relationships. There is a strong attachment between members of the same family, and it is felt that marriage helps

strengthen the family and build it up, and this is the desideratum of every family among the Vandau. That is the reason why the members of a family will materially assist the young man who wishes to get married with loans, so that he may accumulate the necessary bride-price, for each marriage helps make the group larger, and, the more marriages there are, the more children there will be, the more people will carry the name of the family, and the more renowned it will become in the eyes of the other members of the community.

The family of the girl demands a dowry from the man who wishes to marry her. In some cases, the girl has very little to say in the matter, and this is particularly true if all arrangements have been made while she was very young, and the dowry was paid for her before she was old enough to be consulted in the matter. When she attains the age of marriage, which is from fifteen to seventeen years of age, she simply fulfils the conditions which her parents may have imposed on her, if she is already betrothed. But if she is grown and offers are made for her, she may accept or refuse the suitor as she pleases, and though it sometimes happens that her family may coerce her into a match of which she does not approve, this is not usually the case. A strong impression is left that the women of the Vandau have a rather large amount of independence in matters which concern them personally. The dowry is usually paid in cattle, and this custom is similar to that found among the Thonga, the Zulu, the Ba-Ila, and all peoples of East Africa who possess these animals. The number of animals given for a wife varies with the social status of the individuals concerned. After the price is settled upon and paid, the marriage is consummated. Even if there are no children divorce does not ordinarily ensue, although in such a case the family of the wife may give the man a sister of his wife at a dowry which does not amount to as much as the one he originally paid for his first wife. The dowry paid for a daughter is the personal property of the father, although the mother of the girl has what we should term a moral right to say as to the determination of what should be done with the amount he has received for his daughter. There is another restriction also; if there are unmarried sons, the father is

supposed to devote the sums he has received for his elder daughters, or those already married, toward providing the means for his sons to accumulate the dowry necessary before they, in turn, can marry. The accumulation of the necessary amount is something of a problem for the young man, for occasionally the sums of money or the number of head of cattle required is anything but small. It is true that the bride-price was not as high as among the Zulu, where as many as fifty head of cattle might be demanded for the daughter of a chief, or twenty-five for a girl whose father was a commoner; the amounts given by the Vandau were somewhat less. Today, however, the influence of the whites has brought about a great change in the medium of payment, although the principle behind the payments remains the same as ever. In the case of the sections of the Vandau situated inland, cattle are still passed before marriage, but nearer the coast European money is given instead.

According to Simango, the dowry is a gift on the part of the prospective son-in-law to the parents of his bride to show his good will toward them and their daughter. If divorce ensues after the marriage, the husband may usually claim repayment of the dowry he has given, and, unless his wife can prove that she was mistreated beyond her endurance, her parents must return whatever was passed for her. If they cannot make this repayment, the wife must be returned to her husband, to bear his illtreatment as best she is able. Despite the fact that divorce does not occur when the wife fails to bear children, it seems that the dowry, in practice, is really payment on the part of the husband for the child-bearing ability of his wife, since in bearing children the wife furthers the family of her husband and thus increases his position and prestige. It is significant to notice that among the Vandau, as among so many other tribes of East Africa, in cases where the husband has not paid the entire dowry, his wife may leave him at her pleasure and he has no recourse, while in the event of his death the children are regarded as belonging to the family of his wife rather than to his own family, as would ordinarily be the case. This is also true in case of divorce; if the dowry has been paid in full, the children remain with their father, but if it has not been completely paid,

they go with their mother and become part of her family. At the death of a man, his brothers take his wives as their own, or, if he has no brothers, his sons and nephews may take those of his wives who are not too old, although this practice is frowned upon as a general rule. If there is no one to marry the widows, they may return to their own families, but this is not usual.

When a young man is old enough, he leaves home for a time and goes where he can get work and earn money for himself. On his return he gives all of his earnings to his father, who then asks him how much he wants for his immediate needs. The son takes a small portion of the total amount, and then indicates to his father that he should take a portion for himself as a gift. After the father has done this, the remainder is kept for the son by his father—the head of the family is, apparently, the banker for the members of his family, and does pretty much as he pleases with what they have given him to keep for them. He may be called upon for the money when the young man is in need of it—as, for example, when he gets in trouble or wishes to acquire a wife—but the father would not hesitate to use the sums given him for safe-keeping to assist a son other than the one who gave him the money. The young man, on his return, also makes gifts to the other members of his family, and, if he does not do so, he is thought churlish and mean. It is quite possible that this custom is at the bottom of the “nanga” remarked by Smith and Dale in their description of the Ba-Ila.

The average number of wives in a family, in the olden days before the coming of white influence, was two or three. At present this is not the case, and this is due mainly to the vast increase in the cost of living, to the burden of the hut tax, the change in clothing and its increased cost, and similar causes. It is only the wealthier members of the Vandau who can afford to have a number of wives, and such persons, naturally, are not many. Before this was the case, instances might be found of one man with as many as ten or even twenty wives, but this is extremely rare at the present time. To have as many wives as is possible is thought highly desirable for a number of reasons. In the first place, they insure the husband a more comfortable living. With

many wives one may have more fields under his general control and in this way, if he is on good terms with his wives, have more produce than the ordinary person for his own use and for the purpose of feeding his guests. Then, too, a man who has many wives acquires prestige in the community, for since it requires wealth to obtain wives, the man who has many is recognized as a man of wealth and position, and, because of his wealth, is recognized as having power among the people with whom he lives. So the number of wives a man has offers a good index to his place in his kraal, and a person who has many is ordinarily quite respected by his neighbors. Still another reason why wives are regarded as valuable is that the children they bear are a distinct asset to the father. While they are young, the boys herd the cattle of their father and the girls help their mothers about the huts and in the gardens. Later, the girls marry and bring appreciable sums in cattle and currency to their father, while the boys also marry, bring their wives to live in the kraal of their father, and these enlarge the family, make its prestige still greater, and help in the work of the kraal.

NEW YORK CITY.

FIGURES OF SHIPS AND THE FOUR-SPOKED WHEEL IN ANCIENT IRISH SCULPTURE

By GEORGE T. FLOM

THE prominent place that figures of ships and wheels occupy among the rock-tracings of the North is well-known. It is also recognized that some of the occurrences of these figures on stones connected with ancient burial go back to the closing centuries of the Age of Stone, a period in which the cup or "bowl-depression" is decidedly the dominant figure. The tomb- and rock-markings of England, Scotland, and Ireland, in both their compound and their simpler forms, present a considerable community of figures with those of the North. Nevertheless, it is a striking fact that, numerous as these sculptures are, the ship and the four-spoked wheel are both lacking in England, and the wheel of the type in question has been found only once in Scotland, and the ship possibly two or three times. On the other hand several examples of each figure are now known from Ireland.

In the following pages I desire to bring together the evidence regarding these two figures among Irish sculptures; with reference to the ships I identify one additional complete figure and several incomplete ones as carvings of ships, which therefore, if I am right, are to be added to those identified before. I shall first speak of one incised on a stone from the tumulus at New Grange. The figure was first recognized as a ship by George Coffey, who gives a very fine reproduction of it as Fig. 4, Plate VI, in his memoir *On the Tumuli and Incised Stones at New Grange, Dowth and Knowth*.¹ It had before that been imperfectly drawn and considered to be, perhaps, some kind of inscription. Professor Coffey compared it with a similar figure on a stone at Locmariaquer, Brittany, France, and some tracings of ships on Swedish rocks. The author felt that his identification was fortified by the presence at New Grange as at Locmariaquer of an accompanying

¹ Published in The Transactions of the Royal Irish Academy, vol. XXX, 1892-1896.

sun-symbol, the circle, placed in the former immediately above the ship. I add that the latter feature is rather frequent among Scandinavian tracings.² Subsequently Coffey discovered at Dowth an apparently certain example of such a figure, something that gave new support also for that at New Grange. From the account of the finding of the carving at Dowth I quote the following from the author's *New Grange and Other Incised Tumuli*.³ "The interest of the present discovery lies in the fact that we have no longer to argue from general resemblances, but have now an example which may be said to be identical to those in the Baltic. The under surface of the lintel-stone on which this figure occurs is just six feet above the floor of the chamber. The upper surface slopes back like a desk; and it is on this surface that the markings are found. The illustration shows that three or four ships have been cut on this stone. There are numerous natural markings on the stone, and the artificial cuttings are in places very indistinct. It is not possible, therefore, to make out with certainty all the figures. Fortunately the principal boat is well marked. The cutting of this figure, as also some of the others, has been done with a pick of some sort in the manner which is characteristic of most of the cuttings. The haphazard way in which the ships are placed on the stone, without order or uniformity of position, is characteristic of rock-markings in general, and in this respect does not depart from the Swedish examples." The ship in question, which occupies the center of the figure-complex, is very similar to one of the Locmariaquer figures, with high, only slightly curved, prow and stern, and three crew-strokes. The tracings are in both cases quite crude, and the ship-forms of a type much more primitive than the great majority of those of Scandinavian rock-tracings. They remind us somewhat of a few of those of the Löberg group, Norway,⁴ and of occasional ones seen among those of Bohuslän, Sweden. I shall come back to this point below.

² As at Begby, Smaalenene and Haugene, Sandherred, Norway, and Bratid and elsewhere in Bohuslän, Sweden.

³ Pp. 59-60.

⁴ Shown pp. 52-53, vol. 1901-1902, Aarsberetning. Foreningen til norske Fortidsmindesmarkers Bevaring.

To the above two instances of ship-carvings I would add a third, namely one that appears on stone *c* of cairn *U* of the tumulus at Loughcrew,⁵ as shown in the Du Noyer drawings, published by Wm. Frazer.⁶ This stone is herewith shown as Fig. 56. Whether the figure at the top of this stone has been identified before as a ship I do not know, but I find no discussion of it in publications on the Loughcrew sculptures.⁷ The ship in this case differs slightly from the two at New Grange and Dowth; the lines of prow and stern are both curved, rather prominently as the illustration shows. The sun-symbol above and between the high prow and stern is also here to be noted; at New Grange the circle is cut just above the ship. In the Loughcrew figure another circle is carved as part of the prow. The somewhat squarish figure in the same relative position at the stern may also be intended for a circle; it is to be observed that a similar squarish four-spoked wheel occurs at least once at Dowth (on stone no. 2), while at Loughcrew both the single ring and the cupped concentric ring-figure sometimes have this shape, as, especially, the two rings with a cup in the center, on stones *h* and *b*, both in cairn *T*. The oval-like ring above the ship at Loughcrew has its counterpart in a similarly carved cupped ring lower down on the same stone on which the ship appears. Finally, the presence of two more circles



FIG. 56.

⁵ In the cairns of Sliabh-na-Calliaghe, at Loughcrew, near Oldcastle, County Meath, Ireland.

⁶ Published in *Proceedings of the Society of Antiquaries of Scotland*, vol. xxvii, pp. 294-340, in connection with Frazer's description of the sculptures. The excellent illustrations are from a series of ground-plans and water-color sketches by G. V. du Noyer, of the Geological Survey of Ireland. There are figures of sculptured stones.

⁷ Professor Frazer gave no interpretation of the figures. The stones in question are not mentioned by Professor Coffey.

above the Loughcrew ship, apparently cut with very small shallow cups or very short lines, is to be noted.

There are, then, three complete ship-figures, one from each of the three tumuli, besides the three incomplete ones identified as such at Dowth. I find two or three other examples, among the many undetermined figures at Loughcrew, that seem to belong here. I have Frazer's illustrations before me; there is first one at the upper right hand corner of Stone *m* of Cairn *L*,⁸ with keel curved at the prow, but with rectangular stern and again with the sun-wheel, here above and slightly in front of the prow. We may compare one of the Begby ships from Smaalenene, Norway, where a sun-wheel of four spokes is set into the prow.⁹ I think it likely, too, that we have an incomplete ship on Stone *o*, *o*, *T*, at the upper left above the two groups of cupped concentric circles.¹⁰ This would seem to be an incomplete example of a type of ship seen on the rock-tracings, in which the frame is indicated not only by the vertical strokes of which we here see three, but also by several horizontal strokes, representing the side-planks of the frame. There are finally at Loughcrew several examples of a horizontal straight line, above which several short vertical lines are cut, as once on *o*, *o*, *T*, and on stone *b*, *S*, where the long line is slightly curved, and again once on stone *a*, *S*. It seems not unlikely that in these cases the keel and frame of a ship is intended, or perhaps the railing and ribs of the ship.

What information can we gather from the three complete ships regarding seafaring craft in Ireland at the close of the Stone Age, and what relation do they seem to bear to the Mediterranean type on the one hand and to those of the Scandinavian North on the other? In a series of articles on problems connected with the rock-tracings published some years ago Mr. A. L. Coll, Christiania, Norway, offers a classification of the various ship-forms found among Scandinavian tracings, supplemented by others that appear on Bronze Age objects (usually engraved on knives and razors).¹¹ and he compares these briefly with Mediter-

⁸ L. c., Fig. 34

⁹ L. c., p. 119, Fig. 6

¹⁰ L. c., Fig. 54.

¹¹ Aarsberetning, 1901-1902, and 1905-1906, see above note 4.

raanean ship-forms. Coll finds that there are six types of ships on the rock-tracings, ranging from very simple ones to those of greater size, exhibiting more developed forms. Illustrations of the more elaborately constructed ships, types *d*, *e*, *f*, are given from Smaalenene, Norway, and Kville Parish, Bohuslän, Sweden. Ships of the first three types, *a*, *b*, *c*, appear also here and in all regions that are characterized by the south Scandinavian rock-tracings.¹² The simplest types are certainly correctly assumed to be the earliest; on the taller surfaces of rock-walls near water, the simplest forms are regularly highest above the water; at the time the simplest figures were carved the level of the water was about at the foot of those upper tracings.

Type *a* in the series consists merely of a curved line with raised prow, and a series of short crew-strokes above the curved line. The next stage exhibits a double prow, and also raised stern, beyond which the keel projects somewhat. The third type has in addition to the keel, also running parallel, a curved line for the railing, and the two are usually joined fore and aft by cross-strokes. The cases where these are absent and keel and railing are represented merely by the two parallel lines are assumed to be intermediate, i.e., early forms of type *c*. The beginning of the more developed forms is in the direction of presenting more fully the frame of the ship, at first by cutting several vertical strokes for the ribs; in place of these, or sometimes conjointly with them, there follow, then, the horizontal strokes between the keel and the railing, strokes which represent the outer planking of the ship.

Now as to the Irish ships. The three apparently incomplete ship-figures from Loughcrew may be crude carvings of the most primitive forms above. Except for the straightness of the horizontal line on two of them the figure is quite like the ships on the Herrestrup dolmen and on the "Horse-rock" in Blekinge, Sweden. Similar figures of incomplete or primitive boats cut with straight line are sometimes seen among the rock-tracings. In some of these, where the bow is not indicated by a curved keel-line, these

¹² As distinguished from the naturalistic North Scandinavian sculptures, which are probably older.

figures are probably intended to be representations of a part of the ship, the rowers, and the railing on which the oars rested.

Of the complete ship-carvings discussed above, that at New Grange, and apparently also one incomplete figure at Dowth, belong to type *b*, with double prow, but they are irregular in that the keel does not project beyond the stern. With its rectangular stern (if it is to be regarded as complete) the New Grange figure shows an intermediate form between types *b* and *c*; its lines remind us of one of the ships on the Leervaag Rock, Atle Island, western Norway,¹³ and occasional ones seen in Tanum Parish, Bohuslän, Sweden. The complete ship at Dowth shows the double parallel lines for keel and railing, but unconnected at both bow and stern. The carving is rather crude, but the ship clearly belongs with the early forms of type *c*.

Finally as to the Loughcrew ship. The carvings show the form of type *c* as regards the two main lines for keel and railing; but with a single prow (cf. the New Grange ship). As the double prow preceded the railing or deck-line in the development, this shape is irregular from the standpoint of the ships of Scandinavian rock-tracings; it is evidently not wholly lacking there, however. A similarly cut ship, with part of railing indicated, is seen on a rock in the Parish of Sotenäs, Bohuslän, Sweden. I shall not attempt to say whether this ship is a form belonging between types *a* and *b*, or whether we have in this case the sun-ship, which preserved the simpler primitive lines, carrying them over into a later period, giving to the traditional one the railing of the ships of the time. Coll found very few points of contact between the ship-forms of the North and those of the South of Europe; the northern art of shipbuilding developed on the basis of native experience and initiative. The few ships that we have among the ancient sculptures of Ireland seem most of them to range themselves under the Scandinavian types; but along with these there are also suggestions of a development independent of this. It is possible that several of the unusual and apparently unfinished figures on

¹³ Shown, e.g., as Figs. 163-164, Table 45, in *Skandinaviens Hallristningar*, by Axel E. Wotenberg, 1848. Also shown on p. 84 of *Guide to Northern Archaeology*, by the Right Honorable The Earle of Ellsmere, London, 1848.

some of the stones at Loughcrew belong with this group. If so the relative importance of the element that seems independent of the Northern current would be larger than it now seems. At least two of them resemble somewhat the frame of the ship-ornament on a Greek vase (Troy, shown *Aarsberetning*, l.c., 1902, p. 133).

Then as to the date to which the ship-figures belong. The rock-tracings have been shown to be in the main from the Bronze Age, and thereby also the greater part of the ships; however, the cup-hollows in particular, and further the wheel and the ship, also appear in some cases in connection with late Neolithic graves, hence from the same time as the tumuli at New Grange, Dowth, and Loughcrew. It would seem very probable that some of the simple ship-tracings on loose boulders or on ledges of rock in Skåne and Bohuslän, Sweden,¹⁴ go back to the Stone Age. In view of the correspondence in form as between the ship-carvings in the tumuli in question on the one hand and the more primitive types of the same time in Scandinavia, it would seem likely that the ship as a religious symbol in late Neolithic and in Bronze Age Ireland was borrowed from the Scandinavian North.

If the figure of a ship which appears among the carvings in the Factors' Cave, East Wemyss, Fife, Scotland, be of Bronze Age date, it would furnish interesting evidence of the road by which this influence reached Ireland. In the Court Cave, East Wemyss, there are two much weathered and roughened figures, which look like the carvings of small boats of the most primitive type.¹⁵ The ship does not seem to appear among the figures inscribed on rocks in the open anywhere in Ireland. These are here, as in the more numerous sculptured rocks of England and Scotland, largely limited to the markings of cup-and-ring and the modifications of this figure. I am not prepared to say at present whether the ship.

¹⁴ Several shown by O. Almgren, *Tanum Harad Hallristningar*, Göteborg och Bohuslans Fornminnen, VIII, 1906-1912, as p. 478, 483, etc.

¹⁵ That it has symbolic significance is suggested by the presence here, too, of a circle below one end of it. The sculptured caves of East Wemyss are treated by John Patrick in the *Illustrated Archaeologist*, vols. XI-XII. In this connection the ship-sculpture recently discovered at Roskar, Gurskø, Søndmore, Norway, may be compared. It is dated early Bronze Age by A. Björn, *Naturen*, Bergen, 1916, p. 380.

symbol nevertheless remains in some cases in a reduced or schematized form.

The Four-Spoked Wheel. It has been observed above that the four-spoked wheel symbol is lacking in England, occurs only once in Scotland, but several times in Ireland. I shall speak very briefly of these cases here. For Ireland the occurrences that have

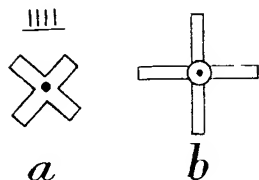


FIG. 57.

come to my attention are as follows: in the tumulus at Dowth stone no. 2 shows a perfect example of a small wheel-figure, and also another larger one, whose enclosed circle is flattened slightly on one side; stone no. 3 exhibits a cross-wheel which is enclosed in an open circle;¹⁶ Loughcrew stone *d*, *S* shows an incised cross-wheel with a similar ring (spiral of one turn) around it. It forms the central figure in a group of, mainly, cupped rings (once a rayed ring);¹⁷ stone *e*, *U* contains the figure



FIG. 58.

of a wheel with eight spokes.¹⁸ It is a clear-cut wheel-figure, not one of the rayed sun-emblems so characteristic of the Loughcrew groups. The occurrence of crosses or four-spoked figures with double furrows for each spoke and without the enclosing circle may be noted, however. In the form shown here (Fig. 57, *a*) one occurs on stone *a*, *S*, while Fig. 57, *b* appears on stone *o*, *T*. Wheels with four spokes are sometimes seen on the

carved rocks of Mevagh, County Donegal, three times in the illustrations by Wakeman.¹⁹ One of these is enclosed in a circle,

¹⁶ New Grange and Other Incised Tumuli, pp. 56-57.

¹⁷ Proceedings of Society of Antiquaries, l.c., Fig. 42.

¹⁸ L.c., Fig. 62.

¹⁹ A Handbook of Irish Antiquities, by William F. Wakeman, Dublin, 1891, pp. 31-34.

another in an incomplete circle; in a third the spokes do not touch the enclosing circle. A marking in the same group contains a cup at the end of one of the arms of a cross.

The four-spoked wheel has been recorded once for Scotland, namely at Cochno, Dumbarton.²⁰ I would also mention in this connection the ornamental ball from Budfield, Aberdeenshire, shown here as Fig. 58, reproduced from Plate XI, of John Alexander Smith's valuable monograph on forty-eight like balls in Scotland, published in the *Proceedings of the Society of Antiquaries of Scotland*, Vol. XI.²¹ This ball has seven discs or projecting knobs with curved tops; each knob is incised with a pattern of crossing lines. It is again the cross or four spokes cut within a circle; the sun-wheel being here not cut in contour as a circle or a ring, but cut in relief, curved and projecting from the surrounding surface between it and the other five discs about it, thus being intended to resemble the curved surface of the sun itself. Finally there is a third and very unusual example, a stone fragment; four concentric cross-wheels around a central cup, and with a ringed cup just inside the outer ring. Illustration: *Proceedings of the Society of Antiquaries of Scotland*, VI, Plate XVI, Figure 1.

In the cross-wheel also, then, as in various other ways²² we seem to have a point of contact between the Celtic West and the Scandinavian North but one, it must be added at once, where the borrowing is probably incapable of proof. For, on the analogy of the wheel of the primitive wagon, the conception of the sun-disc as

²⁰ J. Romilly Allen: *Celtic Art in Pagan and Christian Times*, London, 1912, p. 59.

²¹ Pp. 29-62, and supplement pp. 313-319.

²² Summary of some of these matters in above works by Coffey, New Grange, etc., chapters v-vi and x. See also J. Romilly Allen: *Celtic Art*, pp. 21 and 48-60. The subject was dealt with at length by George Coffey in *The Origins of Prehistoric Ornament in Ireland*, 1897. The theory is that the spiral, coming from the Aegean Islands, first reached the Scandinavian North (probably by the amber route); then later from Scandinavia the symbol travelled by way of Scotland and northern England to Ireland. Professor Coffey seems also to hold that other sun-symbols characteristic of the Scandinavian North, and present in ancient Irish sculptures, were also introduced into Ireland from Scandinavia. But for certain simple sun-symbols an independent origin in different regions must be assumed. The assumption of borrowing is here unnecessary.

a wheel of four, six, or more, spokes was a natural one, which we should expect to meet almost anywhere among sculptured representations of the sun-wheel.

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SOME COMMENTS ON THE INEDITED MANUSCRIPT OF POMA DE AYALA

BY PHILIP AINSWORTH MEANS

IN THE case of a country like Peru where ancient documentary records are entirely lacking, any kind of evidence which even faintly indicates the course of early history is peculiarly valuable. Thus it comes about that certain works written by Jesuits and other priests and by other Spaniards of education in the sixteenth and seventeenth centuries are, for Peruvian prehistory, the chief literary "sources." Among them figure the *Memorias Antiguas* of Father Fernando Montesinos, written about 1642 and published in English by the Hakluyt Society in 1920. In this work there are distinct traces of a highly interesting period of advanced culture prior to the rise of the Incas in the twelfth century.

Other works, notably the *Royal Commentaries of the Incas*, finished in Spain, about 1609-1616, by a great writer, Garcilaso de la Vega, son of a famous Conqueror by an Inca princess, are of authority because of their writer's access to undefiled founts of native tradition. This work, edited by the late Sir Clements Markham, was issued by the Hakluyt Society in 1859-1861.

Another author of mixed blood, Felipe Guamán Poma de Ayala, enjoys an almost fabulous fame on account of the fact that his work has never been published. Sir Clements Markham published an account of the manuscript and Prof. Richard Pietschmann, of Göttingen University, Germany, did likewise. Opinions have seemed to vary as to the historical value of the manuscript and in September, 1922, the present writer made a study of it.

The manuscript belongs to the Royal Library, Copenhagen. Through the courtesy of Dr. John Dyneley Prince, American Minister to Denmark, the writer was able to meet Dr. H. O. Lange, Director of the Royal Library. Dr. Lange told him that the manuscript had been loaned many years ago to Dr. Richard

Pietschmann, librarian of Göttingen University, and that it was still in Göttingen. Through Dr. Lange's great kindness, the writer met Dr. Pietschmann, from whom he received every courtesy, and he was thus able to examine the manuscript. On the rough notes made during this visit, the following comments are based.

Textually copied, the title of the manuscript is *El primero nueva coronica bre(n) gobierno*. There are about 1179 pages, measuring about 10 inches by 7. The bulky work is bound in ancient parchment. Dr. Pietschmann dates it about 1613. That, indeed, seems to have been the date when it was finished. (See MS, page 10, foot.)

The manuscript of Poma de Ayala is differentiated from all other early chronicles of Peru by the fact that it is profusely illustrated with drawings. Artistically, they are atrocious; but they possess much of that vividness and incisiveness which characterize the work in black-and-white of Thackeray and of Cruikshank, and so the pictures tell us much.

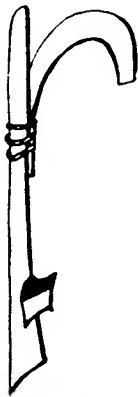


FIG. 59

Quechua plow.
Handle at top,
plow point at
bottom, foot rest
between

As an account of events in pre-Incaic Peru, Poma is a great disappointment. He is as credulous as Montesinos, who began his history of ancient Peru with meaningless babble about Noah and Ophir. The earliest pictures of Poma show us: Adam and Eve, Noah and the ark, Abraham, David, Christ, St. Peter, Pope Damasus, and other personages who have nothing to do with the matter. On page 46 is an inimitable picture of Solis, Columbus, Almagro, Pizarro, and Vasco Nuñez de Balboa all happily travelling on a ship in the South Sea.

On page 48, however, great interest is awakened by a picture of "Varivirachocharuna, primer yndio deste rreyno." (Early Viracocha, first Indian of this kingdom.) Viracocha, to give the more usual name to the culture-hero to whom Poma refers, is shown plowing his field with a foot-plow which I have crudely copied here (Fig. 59). In front of him is kneeling "uariuirachocauarmi"

(early Viracocha woman) who is busy breaking the clods with her hands. An exactly similar scene may be observed any day in the high Andes at the present time. See an article by O. F. Cook on "Footplow Agriculture in Peru" (Smithsonian Report for 1918, pp. 487-491). This valuable paper describes how the foot-plow, *taclla* or *chaquitaclla*, is used between 11,000 and 14,000 feet above the sea on Peruvian farms. According to Poma de Ayala, the Viracocha people flourished during some 800 years.

On pages 53-56, Poma describes and pictures the "second age" of the Indians, whom he here styles "Variruna" and "Variuarimi." The woman is in a stone hut with a stone roof, like those of the *chulpas* around Lake Titicaca, the hut being marked "pucullo." The man is outside, praying to "pachacamac maypimcanqui." The two are dressed in llama hides with the fur on. This second age lasted 1300 years.

The "third age" is that of people whom Poma (pages 58-63) calls "Purunruna." They were descendants of Noah who escaped the Deluge and interbred with their predecessors. (This is comparable to the Biblical nonsense of Montesinos.) The Purunruna lasted 1100 years. Of them it is said that "these said Indians commenced to make woven cloth" and two or more sorts of thread, and they also began to make houses with stone walls and thatched roofs (like the Incaic ones). They raised kings and lords and captains over the legitimate ones of the "uariuiracocha."

Between pages 63 and 79, Poma gives details of his "fourth age," that of the *Aucaruna*, or Warrior-man. It lasted 2100 years. The picture shows two armies facing each other. The one stands upon a stone fortress labelled "pucara" (Quechua for fortress). Its leader is armed with a spear and an oblong shield like those which we see in the early Chimu pottery of the Peruvian coast (between about the time of Christ and 500 A.D.). The others in that army are armed only with helmets, save for one man who is about to hurl a great stone upon the foe below him. The other army is on the ground. Their arms are similar, but better and more numerous. One man brandishes a sling. Another, the leader, presents the point of a long feathered spear at the chest of the enemy leader up in the fortress.

This completes Poma de Ayala's account of pre-Incaic history. The remainder of his thick book is taken up with Incaic and colonial times. It is obvious that Poma's chronology is even more absurd than those of Montesinos and Pedro Sarmiento de Gamboa. It is thus:

I	Variyirecocharuna, flourished	800 years
II	Varituna, flourished	1300 years
III	Purumrana, flourished	1100 years
IV	Aucaruna, flourished	2100 years
		<hr/> 5300

He therefore carries the pre-Incaic period back to about 4200 B.C. (1100 A.D. rise of Incas, less 5300 years). This is obviously untenable on scientific grounds. Even the poor overworked Bible does not justify it, for the ecclesiastically accepted date for the Creation was 4004 B.C.

Resisting the temptation to depart from our task of describing the manuscript, we will now turn to Poma's account of Incaic times.

On pages 79-85 the myths relative to the fabulous origin of the Incas are re-bashed in a jargon unknown on land or sea. It is one of the charms of Poma that his language is indefinable, being a quaint mixture of Spanish and Quechua, with occasional traces of Latin and Hebrew. Another quaint habit of his is that of writing a chapter and then putting a "Prologue" at the end of it. The word *epílogo* did not exist for him.

On page 86 is a picture of Manco Capac, the mythical first Inca. He is dressed in a true Incaic costume: sandals, knee-adornments, poncho with a band of ornament around the middle and without sleeves, long mantle trailing on ground, *llautu* or fillet, and ear-plugs. In his right hand is a long staff tipped with an axhead. A pouch, presumably for coca-leaves, is slung from his right wrist, and in his left hand is a feather sunshade.

Page 88 bears a picture of "Cinchi Roca Inga," the second Inca, really the first historical one. He is similarly clad and accoutred, and in addition he bears a star-headed club of the well-known Incaic type. In the lower left-hand corner of the picture it is stated that he conquered "hatuncolla" and "ariquipa."

On pages 90 and 92, are two pictures of Christ. Who is said to have flourished about this time.

On page 96 is a very animated picture of "Lloqviivpanq," the third Inca. He walks rapidly from left to right, clad as the others, but with his mantle half sliding off and grasped by his right hand. It is said that he reigned as far as Maras. It is not clear just what is meant by Maras.

"Maita Capac Inga" appears on page 98. His mantle is secured by a large knot on his chest. The mantle passes over his left and under his right shoulder. His left hand holds a shield in such a way that we can see that the wrist was passed under a strap attached to the back of the shield. He is wearing also a feathered helmet. He is said to have reigned as far as the province of los Charcas.

Somewhat similar is the picture, page 100, of "Capac Iupanque," who reigned as far as the province of "Aymaraquichiu." Page 102 and page 104 show us, respectively, pictures of "Inga Roca" with his son, and "Iauarvacainga." The former reigned as far as "Andesuyo," and the latter ruled Cuzco, Cuntisuyu, Parinacochas, Chancas, Soras, Andinamarca, and Lucanas. (Poma's spelling is too quaint to copy.) His (Yahuar Huacac's) poncho is adorned with signs of the zodiac. "Viracocha," on page 106, also has zodiac signs on his poncho. He ruled Huancas, Yauyos, Jauja, Cajamarca, Ica, Chinchu, and Rimac. He has a beard.

"Pachacuti Inga," the greatest of all the Inca kings, appears on page 108. In his right hand is a sling, and in his left a short star-shaped club and a shield. His mantle is secured by a knot on the right shoulder. His poncho, too, has a zodiac. He, Pachacutec, ruled as far as the mountains of Chile.

On page 110, "Topa Inga Iypanqvi" is shown as an old man. A long list of conquests is attributed to him, of which Tarma and Huarochiri and Huamanga are the most interesting.

On page 112, "Guainacpac" is shown with his mantle under both arms and tightly tied on his abdomen, which is not exactly emaciated in appearance. He bears a finely feathered javelin in his right hand. He ruled Chachapoyas, Quito, Latacunga, Huan-

cavelica or Huancavilca—it is uncertain which Poma means—Cayambe, and Cañari.

"Topacvcigualpa Gvascar Inga" appears on page 115. On our left is "quisquis ynga," on our right "challcochima ynga." Huascar is led captive between them, his mantle over both shoulders and tied on his stomach. Challcuhima holds the end of a rope tied around the prisoner's neck and, with puffed-out cheeks, blows on a shell trumpet.

There are numerous pictures of *coyas*, queens, as well as of the Incas themselves. Comment will be made upon some of the most interesting of them.

On page 120 is a picture of "Mama Vacocoia." She sits under a parasol held by one handmaiden. Another combs her hair, a third presents a basin of water to her right hand. Her left hand holds a mirror probably of bronze or copper. This picture is redolent of authenticity. That of "Coia Rava Oello," on page 140, is somewhat similar, save that both she and her two handmaidens have deformed heads. She is washing her hair over a basin, and the maids are combing it.

On page 128, "Cocachimbomama" is shown. She is subject to fits and is having a bad one in the picture. Her mania takes the form of a tendency to bite people.

Next follows a series of pictures of famous Inca captains. On page 143 is a very amusing one of "Inga iupanqui." He lies upon a bed made of logs, with four legs. Under his head is a pillow. He has his poncho on and is covered with his mantle. The sun shines through the window above him. His pouch and sandals hang upon one hook in the wall, and his sling and llautu upon another. On the wall is written a bilingual stanza:

dormilon perezoso capitán
ponoycamayoc quilla cinchicona.

There are other pictures of captains, mostly engaged in battles.

On page 159 appears "Inga urcon," who stands upon a large rock which is being dragged along with ropes by men. He shouts at them "Chayapoma uiha." On the stone appears "*lloró sangre la piedra*," and the stone is indeed weeping blood. On page 160 it says of him that he was a son of Inca Yupanqui and that he

was charged with the task of causing stone to be carried from Cuzco to Huánuco and that the stone grew tired and would not move and wept blood, and that it has remained by the road to the present day. In fact Peru is full of so-called "tired stones."

Page 250 shows us four men with foot-plows and four women breaking clods while a fifth woman brings up food and drink.

On page 289 is a picture of a mummy, richly dressed, being borne on a litter to a stone "pucullo" where there are already bones. The two women attending the mummy are weeping, but the four men who bear the litter are grinning. On page 291 a man and a woman, half naked, are putting a skeleton in a hollow tree. These two pictures are very important as throwing light on burial customs.

On page 331 is seen an elaborate litter with a richly plumed roof under which Tupac Inca Yupanqui and Mama Ocllo Coya face one another as they are carried by four men.

A war-litter, without roof and lightly built, is shown on page 333. Huayna Capac is standing up in it brandishing a sling as he goes to conquer Quito and Cayambe.

On page 350 there is a picture of a *chasqui* or post-runner with clothes girded up for speed. He blows on a shell trumpet held in his right hand, and in his left he carries a basket with fish fresh from the sea for the Inca.

On page 354 we see an official, with his mantle knotted up out of the way, actively engaged in directing a workman who is making a road. In the upper part of the background are three *chulpas* or stone towers, one of them labelled "choc llo cochanan." In the lower right-hand corner is a pyramidal structure labelled "bilcas guama capacnan."

We see a suspension bridge slung between two masonry piers on page 356.

On page 369 is a picture of Huayna Capac and Pedro de Candia having an interview at Cuzco. (No such interview ever happened, of course.) Between them, as they face each other, in their respective costumes, Huayna Capac seated and Candia kneeling, are seven gold vessels. The Inca hands a plate full of

gold grains to Candia and asks "Caycoritacho micunqui?" and Candia replies, "este oro comemos."

On page 377 is a picture of the mummy of Huayna Capac being borne to Cuzco for burial in a large roofed litter carried by four men. There is a female mummy with it, and a priest with sacred vessels, all in the litter.

Between pages 390 and 414 the pagination is very much confused. There is a picture of an Inca bed. There is also a picture of a woman working at an upright loom fixed to a tree, and of another woman with her loom fastened to the wall.

After page 414, the subject-matter is mainly of historical interest.

Between pages 494 and 525 Poma has a good deal to say about the sins of the *corregidores* in colonial times, especially in amatorial matters.

On page 564 is a picture of a weeping Indian woman working at a loom tied to a tree while a Spaniard stands over her with a club in his hand.

On page 573 is a picture of a priest holding an Indian man and woman by their hair and forcing them to let him marry them.

On page 576 is a priest, seated in an armchair and kicking a pregnant woman who kneels before him weepingly confessing.

We see, on page 594, a priest trampling on the face of a *cacique* or Indian official whom he has knocked down with a large stick because the *cacique* has protested against the ill usage of girls and women under his charge.

On page 694 is a picture of a weeping woman with a child at her back, working at a loom. An unshaven priest grasps her by the hair and makes her work. The text tells of the abuses practised by the priests on the Indian women.

The remainder of the book is less important. But pages 1084 to 1093 have an interesting list of *Tambos* or rest-houses scattered along the roads.

We see, in short, that, as an historical narrative, the work of Poma de Ayala is negligible. But as a source for information as to customs and usages current under the Incas and in early colonial times in Peru it is invaluable.

Various plans for the publication of this work have been made at divers times, but as yet none has borne fruit. The Peabody Museum was promised a photographic copy of the manuscript some years ago, but the presentation was never actually made.

LONDON, ENGLAND

BOOK REVIEWS

METHODS AND PRINCIPLES

The Racial History of Man. ROLAND B. DIXON. New York: Charles Scribner's Sons, 1923. xvi, 583 pp., 44 pls.

As explained by the author in the preface, this book is in large measure an experiment. It is an experiment in method and novel in that the author has entirely disregarded the conclusions of earlier authors and drawn all his inferences directly from the original data. After the customary anthropological explanations and apologies the author sets forth his method.

Professor Dixon proposed to make a world-wide survey of the racial characters of man. For this purpose he ultimately chose as his primary criteria the length-breadth and length-height cranial indices and the nasal index. As occasion arose he frequently resorted to other indices and observations but in the main his work is based upon these three characteristics. The choice of these three characters was in some measure a necessity since the measurements upon which those indices depend are among those most universally taken and offer perhaps the least variety of technique. Even when limited to these three criteria the author was frequently forced to depend upon averages alone and in some instances the cranial length-breadth index only was available. So then, the choice of criteria is no reflection upon the author but rather upon the status of anthropological method and presentation.

With few exceptions it has been customary to draw our inferences in craniometry and anthropometry from mean or average results. The few exceptions are those who instead gave the percentage distribution of index classes such as dolichocranial, mesocranial, etc., etc. Professor Dixon expresses dissatisfaction with these methods as follows (page 6):

. . . there is I believe, an unsatisfactory feature in all of these schemes, in that great reliance is placed upon the use of averages and the data are therefore not treated on the basis of the actual combination in the individual of the several criteria upon which the classification is based. For instance, a series of skulls is measured and the average or mean or mode of the cranial

index, the facial, nasal, orbital and palatal indices, etc., calculated, and the people represented by the crania are then said to present the characters of these averages—they are, we will say, mesocephalic (medium skulled) euryprosopic (wide or low-faced) mesorrhine (medium nosed) etc., etc. Now it may well be that if actual combinations of head, face, nose, orbit and palate forms in the individual skulls are examined, hardly a single skull will show the association of characters stated on the basis of averages to be typical of the group. A large proportion of the whole series may consist of individuals who are brachycephalic, euryprosopic, platyrrhine etc., etc., while an almost equally large number may be dolichocephalic, mesoprosopic, leptorrhine, etc., etc., with minorities showing other combinations of the several characters. All such contrasts are blurred or concealed when the measurements are averaged and so the series of crania may in reality be in no sense uniform but made up of several clear cut and radically different groups each marked by its own specific combination of characters. Only, I believe, by thus taking into account the actual combinations of characters in the individual, can we reach a correct understanding of the true nature and relationships of any people.

I believe Dr. Dixon has made a good point here and that an analysis of individuals in any series will help us to interpret more sanely the averages, standard deviations, and coefficients of correlation. The physical anthropologist who has entered the field with a biological background does this visually. Thus such men as Flower, Turner, and the like drew most of their conclusions from their inspection of the material, and the averages, etc., given were more or less mere formalities. But with the development of the biometric or statistical phase of anthropology the average, standard deviation and coefficients of correlation have largely replaced an inspection or study of the material itself. Often this part of the work has been delegated to others who had only a mechanical interest. A study of original material will convince anyone that some weird mixtures have been averaged with no recognition of this fact in the presentation of the averages.

As a remedy for this situation Dr. Dixon classifies each cranium on the basis of the associated length-breadth, length-height and nasal indices. He accepts as descriptive classes the orthodox classes, dolichocephalic, mesocephalic and brachycephalic; chamaecephalic, orthocephalic and hypsicephalic; and leptorrhine, mesorrhine and platyrrhine. A given skull may be brachycephalic, orthocephalic and platyrrhine, or dolichocephalic, hypsicephalic and leptorrhine, etc., etc. The total number of combinations is of course $3 \times 3 \times 3$ or 27. The variation of each cranial series was expressed in these terms.

Thus a series of Eskimo crania from northwest Greenland analyzed as follows:

	per cent
D-O-L =	60.5
D-H-L =	18.6
D-C-L =	7.9
D-O-M =	5.2
M-O-L =	5.2
D-H-M =	2.6

D-O-L stands for dolichocephalic-orthocephalic-leptorrhine, etc. Of the 27 possible classes only 6 occurred. In another series from Northern Italy 19 of the possible 27 combinations occurred. It will be seen that Professor Dixon's method does at least reflect the variability of a series.

Have we any *a priori* grounds for regarding these 27 classes or groups or combinations as "races"? According to the author himself we have not. But, as he points out, certain of these combinations are characteristic of certain groups usually spoken of as races. For example, the Alpine type is usually brachycephalic, hypsicephalic and leptorrhine, the Negro is D-H-P or D-O-P, the Mediterranean is D-C-L or D-O-L, etc. But even these correspondences are only rough and approximate as the author himself recognizes in the introduction. On page 5 he continues:

Stated in general terms this would seem to imply that many of the generally accepted races as now understood, tend to be characterized by such combinations of our three selected indices as exhibit these in their extreme forms i.e. they are groups which do not comprise any of the medial factors (mesocephalic, orthocephalic or mesorrhine). This suggests the possibility that groups without medial factors may be regarded as definite types now rarely found in their pure state and that all the groups comprising one or more medial factors are the result of the blending and fusion of these.

But before any such theory can be accepted even as a tentative working hypothesis one immediate obvious difficulty must be confronted. In assuming that intermediate forms have arisen from the blending of two extreme forms the whole complex question of heredity is at once raised. If the relative proportions of the skull and nose are subject to the laws of Mendelian inheritance then the origin of medial forms cannot well be accounted for on the basis of mixture, since according to these laws the offspring of contrasted forms reproduce the parental types.

Professor Dixon quotes the work of Frets as giving grounds for the belief that head-form is a blending character. By analogy he assumes that nose form is also a blending, non-Mendelian character. While I am not familiar with the work of Frets, I am familiar with

several papers which give grounds for an opposite belief. (See especially papers by Boas and Von Luschan.)

But to my mind the validity of Professor Dixon's results do not hinge wholly upon the manner of inheritance, for in many cranial series he is dealing with wholly or almost wholly mechanical mixtures and in many others, where two or more races are involved, the mixture has not proceeded to the point where the parental types are outnumbered by the mixed offspring. But on the other hand if Professor Dixon's assumptions as to the manner of inheritance were true he would have been much less successful than he has been in isolating the fundamental types.

Professor Dixon's assumptions are also open to objection on several other points. In the first place it is highly improbable that the current classes of the indices can be taken as seriously as he has taken them. These classes were determined by a large number of workers with widely varying points of view and purposes. It is too much to expect that they would mechanically separate pure types for us. It also seems highly improbable to me that all individuals with intermediate characters are mixed types. At least I should want more proof than the author offers before accepting such a generalization. After admitting that he stopped at three characters as a convenience and to avoid increasing the possible combinations from 27 to 64, etc., he stands out for eight fundamental types in spite of the fact that if he had added one more character his extreme types would have been increased to 16. While it is equally true that he might not have found all of these extremes well represented it is certain that had he added, for example, prognathism as a criterion he would have separated some of his groups into two groups. This is true of his D-H-P (Proto-Negroid) group in particular. The author extricates himself from this predicament in the same manner as many others before him. He argues that the three characters he has chosen are immutable and that others which disturb his schema are superficial and malleable. While it is conceivable and probable that some characters change rapidly and others remain stable for a long time it is probably true that these have varied from time to time and from group to group so that no generalization in a group so diverse as man is possible. As to his superficial characters I doubt whether a survey of the animal kingdom as a whole will substantiate his opinion that superficial characters are more mutable than internal characters.

Above I have just argued that Professor Dixon's criteria were not narrow enough and that he has included two types under one head

(D-H-P, etc.) I must now apparently contradict myself and argue that his classes are not wide enough. An examination of his analyses will show a suspicious pairing of types such as Mediterranean and Caspian (D-H-L and D-C-L), Alpine and Palae-Alpine (B-H-L and B-H-P) and the like, two groups which are really separated by one character only. This leads us to suspect that in many instances his mechanical method has chopped off the ends of normal frequency distributions. This should not be taken as a generalization, however, for in a few instances where I have been able to check from original data I have found the two types occurring together as Professor Dixon suggests.

As other reviewers have pointed out, there are numerous discrepancies in the tables of averages in different parts of the book but a closer examination will show that in most of these cases the averages are based upon a different number of crania, which may well account for these differences. His tables of averages for his selected characters are of course not very significant since his selection arbitrarily determined them. In the conclusion he has given us several other characters such as bizygomatic diameter, upper face length (height!), gnathic index and capacity. The differences which occur are minimized and are claimed by the author to substantiate his general conclusions. But many of us cannot so lightly dismiss such average differences within a type as 14, 21, and 28 mm. in face width, 6 and 9 points in the upper face index, 6, 8, and 9 points in the gnathic index and from 200 to 300 cc., cranial capacity. These differences between the averages of the groups making up a type in many cases greatly exceed the differences between the averages of the different types.

While my criticisms are immoderately long and detailed, it is not to be inferred that this book is without merit. As Professor Dixon claims, many of his extreme types do correspond roughly to what we generally recognize as racial types. Thus a selection of B-H-L crania in Europe would in most instances isolate a large proportion of Alpine crania. In Africa a selection of D-H-P will isolate a large proportion of the Negro type. The D-H-L crania will less perfectly represent the Nordic type. Most of his other extreme combinations more or less closely approximate a generally recognized type. When these extreme forms are found in large numbers I should say they were significant. When their presence is deduced from a large number of intermediate types I am suspicious of the results. How successful Professor Dixon has been could only be estimated by a complete

re-check of the original material since he has not presented the data in such form in his book as to make this possible. To do him justice, the book should be reviewed by specialists in different areas. I feel incompetent to pass upon the book as a whole. Judging his results solely upon the basis of the Pacific material with which I am familiar, I would say that Professor Dixon has been very successful and has probably given a truer picture of racial history in that area than any previous worker. But even here I should seriously doubt the homogeneity of his Proto-Negroid and Palae-Alpine types over the entire area.

The author's adoption of such names as Caspian, Mediterranean, Alpine, etc., will undoubtedly do much to antagonize students who have already formed rather detailed associations with these terms when applied to race. Had he retained his structural symbols (B-H-P, etc.) throughout, his book would have obtained a much more sympathetic reading by many.

When the average American student reads of such groups as Proto-Australoid, Proto-Negroid, Caspian and Mediterranean types in America his credulity is shocked, yet if he will substitute for these terms the symbols D-H-P, D-C-P, D-H-L, etc., he will find one of the most interesting discussions of the distribution of types in America that has yet appeared. In some instances at least I feel convinced that Professor Dixon's world-wide analogies also hold. I believe there is overwhelming evidence of a primitive Caucasoid element in prehistoric America and that the striking "parallelism" of the Pericue material and the "Proto-Australoid" of Dixon is worthy of much more study.

Personally I have found the book most stimulating and while I should hesitate to recommend it unconditionally to the general reader I am convinced that no specialist can afford to ignore Professor Dixon's discussion of the variability, racial composition and sequence of types in specific areas. Many of his suggestions of world-wide distribution are worthy of serious consideration and his point of view could profitably be adopted by all physical anthropologists. He has probably a better view of the whole problem than any previous author of a world-wide synthesis in physical anthropology. The value of his suggestion that individuals must be studied as well as averages cannot be overestimated.

Professor Dixon should be given credit for the performance of a gigantic task. Only those who have worked in the field can appre-

ciate the amount of labor involved and the number of obstacles encountered.

It is extremely unfortunate that the author went astray in his premises for beyond this point the work is admirable. That he has not been successful in completely solving the problems which have baffled students for centuries, is no reflection upon his ability. If the book does no more than focus attention more clearly upon these problems it will have justified its publication.

There is much useful information of a geographic and cultural nature scattered throughout the book. The photographs, too, are more representative of the types of man than those in books of similar theme. The bibliography should prove extremely useful to those interested in physical anthropology. I hope Professor Dixon will continue his studies along these lines.

LOUIS R. SULLIVAN

Diet and Race: Anthropological Essays. F. P. ARMITAGE, M. A.
New York: Longmans, Green and Co. 144 pages. Price \$2.25.

This is an interesting but entirely uncritical attempt to interpret race in terms of diet. The book is composed of three more or less independent essays on "Diet and Physique," "Diet and Colour," and "Diet and Cranial Form." The first essay is best in form and the most critical of the three. In the second essay both diet and color are vague qualities, roughly estimated in quantity. The third essay is in very crude form and apparently only partially digested by the author himself.

The essayist's lack of an anthropological background is apparent throughout the entire book. Both in his diagrams and in the text he erroneously describes the cephalic index.

His compilation of the diets of different people may be of some use to elementary students but would unquestionably have been of much more service if he had given an occasional reference to the sources of his information.

LOUIS R. SULLIVAN

Traité Comparatif des Nationalités. ARNOLD VAN GENNEP. Paris:
Payot et Cie., 1922. 228 pp., 8 fcs.

This is the first volume of a series of three which, when completed, will form a treatise on nationalities. As an aftermath of the War we have had quite a crop of books dealing with nationality and allied

topics. Mr. Van Gennep's contribution recommends itself as an attempt to apply the ethnological method in a field where hitherto statesman and theoretician have worked only too harmoniously to the grievance of truth. According to the author, facts of nationality can be studied with the same rigor of treatment as myths, ceremonies or artifacts. To that end they should be classified and serially presented instead of being considered in isolation. Thus one could discern their close interdependence and follow the genetic organization through which this interdependence is preserved under the apparent variation of forms giving to each series its particular cast and quality of permanence.

The first chapters of the book deal with the perilous task of clearing up the concept of nationality. Some definitions, from the juristic expressions in vogue during the eighteenth century to such delightful euphemisms as the recently propounded "*manière de penser nationalitaire*," are examined and rejected. Mr. Van Gennep, however, is not always quite precise or, perhaps, consistent in distinguishing between nationality and nationalism. The word nationalism is here used to translate the author's "*sentiment nationalitaire*." Nationality may mean "the quality of being a nation" as in the eighteenth century, or, as the author frequently uses it, what is understood by, *anglice*, nationalism. Of the people that have recently been promoted to the dignity of nations in Eastern Europe, some, like the Poles, could boast of a nationality, having been nations in the past, whereas others were stirred by a vague nationalism that harked back on one hand to primitive ideals of democracy, and, on the other hand, to the pattern furnished by the already successful nations of Western Europe.

Mr. Van Gennep would contend here that, though heretofore unrecognized, this nationalism is virtually as perfect as the crystallized product we call nationality. Some confusion may be avoided, it is believed, by distinguishing between them. The nation as an historical fact preceded the concept of nationality. This one was abstracted from the other. In the case of nationalism we are dealing rather with the will to become a nation. The movement may be fundamentally identical with the one that eventuated in the formation of nations. There is nevertheless something additional. It behaves in function of the past. Culture has set in. The nation is there as something to be realized. The form is known before expression takes place.

Doubts, indeed, may be entertained as to whether the peoples now in the throes of nationalism will escape the influence of the nations of Western Europe. These furnish them with directions and a definite type of organization. It is to the ideal of the nation that they turn to satisfy that desire for psychic security which Mr. Van Gennep finds at the bottom of the movement. The temptation to pattern their destinies after the experience of their elders in nationalism will be strong upon the new groups. That there is more than one solution possible ethnologists will all agree. Only the shade of Spencer could dissent. But contiguity and precedent make the steering of a new course difficult to expect. In fact you have in Europe a milieu particularly fraught with history. Some sort of cultural mnemism obtains. Nationalism, as Mr. Van Gennep conceives it, is a social process. At a lower level, lesser groups being involved, the same problem might, he suggests, be dealt with in the medium of totemism. Here, however, we have a social process which avails itself of an historical contingency.

Mr. Van Gennep finds the equivalent of nationalism in patriotism, at least essentially. Quite pertinently he observes that nationalism is something independent of the organization known as the nation. There have been nations without nationalism, like Switzerland. France seems to have yielded to it during the Revolution. Conversely, nationalism exists without the political support of the nation. The Swiss who were till recently a nation without nationalism could claim a nationality. The Poles who had ceased to be a nation could claim a nationality while adopting, in compensation for a thwarted activity, the attitude symptomatic of nationalism. The Mazurians who had no nation, who had never functioned nationally and were set up by the German government merely as a sort of pseudo-nationality, that is a separate linguistic unit, to pare down the Poles, have lately given signs of nationalism.

What Mr. Van Gennep identifies as nationality is frequently nothing more than the tendency in a population to develop coherence under some stimulus, determined in its assumption of type by the success of that recent historic form, the nation. Before the Renaissance the type might have been religion. To call such groups nationalities is like seeing them in the light of what they may or may not ultimately become. Mr. Van Gennep himself observes that new forms may soon be in the ascendant. He does not hesitate to speak of a "Gypsy" nationality. This only shows to what extenuation of

meaning the concept of nationality has been driven. It is the more striking coming after a discussion where the author plausibly identifies nationality with territoriality. He must have territoriality in the case of the Jews and resorts to symbolism to find it. The Gypsies have no sense of territoriality, but they must be a nationality. Mr. Van Gennep admits himself defeated by the evidence, but he must have them as a nationality. You feel all the time that his concept of nationality is a very elastic one in the application of which he insists sometimes on very definite and doctrinal criteria while at others he stretches it so as to cover cases which lack these very criteria.

To turn to another question, the validity of the opposition Mr. Van Gennep establishes between these two "principles," the European and the Oriental, may be questioned. In the light of the former, peoples claim the right to govern themselves, as among the Germanic tribes and wherever primitive democracy still confronts us. Despotism is implied in the latter, which Mr. Van Gennep finds instanced in Assyria, Egypt, Rome, in fact wherever great dominions have assumed consistency. Under the political system that thus characterizes the Orient, peoples are treated as chattels, mere human material to be disposed of without regard to their democratic rights. There seems to have been, indeed, an unfortunate adhesion between the spread of civilization and imperialism. Our civilization gained its early momentum among peoples that lived leagues away from the shores of the North Sea and came under the necessity of political organization when the Germanic tribes still could afford to elect their chiefs. These peoples were agriculturists who practised irrigation. Such agriculturists, dependent upon a common supply of water, generally from a river, are bound to develop organization. They form larger and prosperous units, soon the object of attacks on the part of desert tribes. They retaliate, organize themselves for warfare, and militarism becomes a feature of their life. Either they find it convenient to subdue their predatory neighbors once for all rather than fight them afresh every spring, or these neighbors themselves come seeking their protection against more numerous or more aggressive tribes of the desert. This is the "Oriental principle." Civilization travelled with it. The fact that Northern Europe was long the abode of primitive liberties did not prevent the formation there, even within the last three hundred years, of some very efficient empires. On the other hand, even in the Orient, that *fons et origo* of despotism, primitive democracy has not altogether been annihilated.

Is not Armenian nationalism of the stubbornest? Turkestan itself may some day startle us.

The most original part of Mr. Van Gennep's book lies in an attempt to show under the principles, beliefs, symbols appealed to at different times, by different peoples, under what he calls the external elements of nationality, the constancy of a certain phenomenon which consists in a people's assertion of themselves as distinct from others. Such a conception might well be expected from the author of *Rites de passage*. A whole chapter is devoted to such symbols of differentiation as tattooing, mutilations, body-marks, by which at primitive levels, group affiliation is signified. Food, dress, houses, village organization, the whole complex of customs and mores are also drawn upon to the same effect. However, Mr. Van Gennep does not always make it quite clear whether he thinks that a collectivity having realized its being different from others generated group feeling, or if it purposely used marks in order to emphasize distinctness. On the whole he seems to favor the latter view which certainly cannot fail to strike one as somewhat tinged with teleologism. The way in which people use a certain trait is no criterion of its origin. Language was not used as a symbol of differentiation between nations till about the end of the eighteenth century. There is ample evidence that men spoke before. Totemic features may have had a long history before they were finally selected as group symbols.

In the chapter devoted to language Mr. Van Gennep shows what importance it artificially acquired in the hands of governments during the latter part of the last century. Linguistic distinctions were in some cases violently denounced, as in France during the Revolution when they threatened the unity of the nation, France then being ingenuously or purposely considered as the country where French is spoken. They were set up as political instruments to defeat other languages as Mazurian already mentioned; hence a Mazurian nationality. Only the *Dictionnaire philosophique* could do justice to the niceties of Austrian census collectors in their attempts to distinguish between *official*, *provincial* and *usual* languages. Such serializations either aim to deal with a bewildering diversity of languages or else to influence statistics so as to countenance obvious governmental policies. To the average Frenchman or Anglo-Saxon it must seem passing belief that there could be countries where a monoglot person is the exception. A very trying country to the census collector must also be Macedonia. In sheer desperation, apparently,

these officials have become inventive. Hence such ethnological pearls as "Hellènes d'origine Tsigane" or "Hellènes bulgarophones" or still better, "floating" Bulgarians, Serbians and Greeks, at the mention of which Mr. Van Gennep's prose betrays a smile. There is also the case of a man whose mother tongue was found to differ from that of his mother. Falsifications, of course, are to be expected. *C'est la guerre!* Rightly enough, Mr. Van Gennep refuses to listen to people who pretend that such defective statistics can be corrected by the application of a standard coefficient of error.

The problem of frontiers is dealt with in the last part of the book. This is another symbol of differentiation and as artificial as any other. Neither rivers nor mountains are ultimate boundaries. Mr. Van Gennep briefly discusses the two concepts of frontier or marche and limit or boundary, the former, he points out, of more ancient status than the latter. The geographic units formed by the interrelation of mountain, river, plain and sea in the fluvial basin further comes under his attention, the most satisfactory of all territorial bases advocated for the nation. Lastly, he takes issue with L. Dominian on the question whether natural regions and linguistic frontiers coincide, holding against the latter that they do not. A map itself, he observes, may become a symbol of differentiation, an equivalent of the flag, the cartographic symbol. There is a superstition of mathematics as something that never errs. There is likewise a superstition of the map. It engenders those of the historic frontier and of the collective name. These, like language, are impressed upon the child in the primary schools. Thus we simplify things to teach them to children. Should we now wonder that this forced simplicity should make ultimately for a certain reduction in the scope and depth of our culture? Education, in short, is getting the better of culture. The cult of the average is another symbol which Mr. Van Gennep might well have studied.

P. L. FAYE

Psychologie des primitiven Menschen. (Handbuch der vergleichenden Psychologie, Band I, Abteilung 2, pp. 145-320, 76 figs., 16 pls.)
RICHARD THURNWALD. München: Kafka, 1922(?).

In his preface Dr. Thurnwald anticipates two obvious objections, one against the topical, culture-historical arrangement of the book, and the other against the scant treatment allotted to the religious and philosophical aspects of culture. In reply to these points he

insists that the dearth, or rather absence, of preparatory labors made any other procedure well-nigh impossible; while the subtler aspects of culture must be apprehended in their general cultural context and have, moreover, found extensive treatment in other recent essays of his. While a certain justification cannot be denied to both propositions, the result is necessarily disappointing, inasmuch as the distinctive illumination that might be furnished by psychological principles is inevitably very much reduced, and that precisely on those questions they are best capable of clearing up.

It is naturally impossible to follow Dr. Thurnwald through all the field of anthropology in this brief notice and a summary statement must take the place of elaborate analysis. On the whole, the author impresses one with his robust common sense, which prevents him from championship of extreme views. The last section on "Geistesverfassung" is especially suggestive of psychologico-ethnological synthesis, but unfortunately the author's over-conciseness prevents him from doing justice to the subject, and the reader who has no access to his other articles feels balked at the most interesting part of the inquiry.

The bibliography is remarkable for the inclusion of American titles, which are so commonly ignored by European scholars.

ROBERT H. LOWIE

AMERICA

Beothuk and Micmac. FRANK G. SPECK. (Indian Notes and Monographs. Museum of the American Indian, Heye Foundation.) New York, 1922. 187 pp., 42 pls., 3 figs., 2 maps.

This publication comprises two independent papers—"Studies of the Beothuk and Micmac of Newfoundland" (pp. 11-80) and "Micmac Hunting Territories in Nova Scotia and Newfoundland" (pp. 81-156). In the former Professor Speck discusses the relations of the Micmac to the "Red Indians," sketches the ethnology of both, and sets before us the information gleaned from Santu, an old Indian woman, "who claimed that her father was one of the last survivors of the Red Indians of Newfoundland," a statement which, it seems, met with unwarranted skepticism on the part of other writers. Professor Speck views the Beothuk as an archaic member of the Northeast Algonkian group, both culturally and linguistically (p. 69 f.).

In the second paper the author reverts to a subject peculiarly his own, the theoretical significance of which has but recently come to be recognized. The Micmac, like their congeners, have definite family territories, though these are less permanent and hereditary than elsewhere in the area, while the chief enjoys greater authority in the redistribution of the territories (pp. 86, 94). The occurrence of these privileges is attested by a missionary as early as 1691.

Several other ethnographic details of great interest are mentioned, e.g., the practice of temporary matrilocal residence by the Micmac and their neighbors (p. 90) and their skill as "map-makers, utilizing birch-bark for the purpose of charting not only travel routes but hunting territories as well" (p. 98 seq.). This custom is shared by the Montagnais (p. 106) and will recall to the comparative ethnographer the Eskimo maps, to which Galton paid such high praise.

The numerous illustrations greatly add to the value of the interesting little volume.

ROBERT H. LOWIE

ASIA

The Lhota Nagas. J. P. MILLS. London: Macmillan and Co., 1922. xxxix, 255 pp., 27 pls., 3 maps.

The Government of Assam has long recognized the need and value of adequate anthropological study of the many native tribes under its jurisdiction. The latest addition to the fine series of such monographs published by its direction is this volume on the Lhota Nagas, to which Mr. J. H. Hutton, author of the monographs on the Angami and Sema Nagas, contributes a valuable introduction.

Earlier volumes in the series have dealt with the Nagas of Manipur on the southern border of the Naga Hills, and with the Angami and Sema of the more central districts; the Lhota, on the other hand, occupy the northern edge of the region, toward the Assamese plain. The tribes known generically as Nagas do not form a group easily distinguishable from the other peoples of Assam. They are clearly a very mixed group, comprising elements derived from various sources, blended in varying proportions in the several tribes. In his introduction Mr. Hutton distinguishes a northern or northwestern element of Tibeto-Burman speech allied to the Akka, Mikir, etc., an ancient Mon-Khmer factor, a small eastern or Thai influence, and a strong southern immigration allied to the Kuki-Lushai-Chin peoples,

which drove before it still another very different racial element, which became the predominant factor in the Angami.

Culturally the Lhota Nagas may be described as a sedentary folk, living in ridge-top villages and cultivating rice as their main food product by the wasteful jhuming or slash and burn method. In this latter particular they are in sharp contrast with the Angami, who have developed terraced irrigation to a high degree. The Lhota are good weavers and potters, but poor smiths, metal-working being looked down upon and regarded as unlucky. Dogs, pigs, goats and mithan are kept as domestic animals. The weapons in use are the dao or heavy knife, the spear and the cross-bow, while for defense large matting or hide shields are used. The Lhota house is smaller and less elaborately built and decorated than that of the Angami or Sema, and unlike the Angami every village includes a Morung or men's-house.

The Lhota are grouped in three phratries, distinguished by the use of different terms for "mother," and these are in turn divided into a series of clans, which are further split into kindreds. The original strict exogamy between phratries and clans is now in process of breaking down. Polygamy is the rule for all who can afford the purchase of more than one wife. Each village forms an independent unit politically, although, in war, leagues between several villages were often formed. The villages were formerly ruled by chiefs aided by a council of old men, but, since war and head-hunting have been stopped by the British occupation, the importance of the chief has largely disappeared and the council is today the only active governing force.

The religious conceptions of the Lhotas involve a belief in a series of upper worlds occupied by deities who play only an unimportant part in human affairs. Every village has a priest or Puthi who holds office for life, and directs the ceremonial life of the people. The ceremonies are very numerous and are mainly grouped under the head of "gennas," i.e., ceremonies involving a number of taboos of the type so widespread in southeastern Asia. The series of social gennas, whereby a man attains greater and greater social rank, culminating in those in which large monoliths are dragged to and set up in the village, is, as among most of the Naga tribes, of great importance and interest. In these and other ceremonies, animal sacrifice plays a large part. The dead are buried, in some cases in dug-out, boat-shaped coffins. The spirit is supposed to go to an under world.

As in the previous volumes dealing with other Naga tribes, there are among the Lhota a large number of cultural elements which find striking analogies in parts of Indonesia and the rest of the Oceanic area, and serve once more to raise the interesting but still unsettled question of the probable relations between the peoples of south-eastern Asia and the islands of the Pacific region. If we but had for the tribes of French Indo-China anything comparable to the series of monographs, of which the present volume on the Lhota Nagas forms a part, we might well be much nearer the solution of the problem. In the absence, however, of any adequate studies of the wilder tribes of the southeast, we must be doubly thankful for the fine studies issued by the Assam Government, and hope that other volumes as admirable as this on the Lhota may be added to the series.

R. B. DIXON

MISCELLANEOUS

Essais de folk-lore biblique. P. SAINTYVES. Paris: Librairie critique Emile Nourry, 1923, xvi, 483 pp.

Quite recently, in these columns, a book by the same author was the object of a review. Most of the criticisms we had then occasion to make apply to the present volume. Mr. Saintyves is the most diligent and painstaking collector of facts. His chapters are like show-cases where specimens are displayed with condensed information on the labels. He takes you around, calls your attention to this or that particular fact, obviously delights in the size of his collection, but at the end of the tour you are, perhaps, left a little to yourself to draw conclusions.

In this book the author studies six folk-lore motives, namely, the fire that descends from heaven, Aaron's blossoming rod, water gushing out of rocks, magic circuits around towns, the transformation of water into wine, and the multiplication of the loaves. The thesis he mainly advocates is that the origin of such motives can be found in rites of a seasonal or apotropaic nature. Mention of *The Golden Bough* is frequently made in footnotes. As a popularizer of Frazer, Mr. Saintyves lacks the readiness of style, the ability of presentation, which characterize the articles of Mr. S. Reinach. His studies are exceedingly conscientious; he nevertheless manages to steer the reader through a redundancy of variants with the minimum of taxation upon one's good will.

In the preface the author defends the symbolistic interpretation of myth motives against the pure rationalist school which, he says, in a field where *mana* runs high, is likely to miss the point. This theory would ultimately justify a definition of the scientist as artist. Special gifts of imagination fit you to interpret a certain phase of religion or culture. Is interpretation, however gifted, knowledge? The symbolic cast characteristic of the archaic mind worked egregiously in the case of a Cushing's interpretation of Zuñi life. His experience was probably unique. The scientist does not derive individual experiences from the material he studies. Something stops where he knows. However, there it is for us to know without further criticism of the fact.

P. L. FAYE

SOME NEW PUBLICATIONS

Buxton, L. H. Dudley. The Ethnology of Malta and Gozo. (Journal of the Royal Anthropological Institute of Great Britain and Ireland, LII, 1922, pp. 164-211.)

Cole, Fay-Cooper. The Tinguian: With a chapter on Music by Albert Gale. Social, Religious and Economic Life of a Philippine Tribe. (Field Museum of Natural History, Publ. 209, Anthropol. Series, xiv, No. 2, 1922, pp. 228-493, 83 pls., 26 figs.)

Friederici, Georg. Malaio-polynesische Wanderungen. (Sonderabdruck aus Verhandlungen des XIX Band d. Deutschen Geographentages zu Strassburg i. Els 1914.)

— Reviews of E. Nordenskiöld, A. Wichmann, E. W. Dahlgren, Hans Staden von Hornberg (Göttingische gelehrte Anzeigen, 1920, 185-189; 1922, 300-305; 1923, 145-150).

Haddon, A. C. Review of Goldenweiser's "Early Civilization." (Nature, Aug. 11, 1923, 198f.)

Lehmann-Nitsche, R. El grupo linguístico Tshon de los territorios magallánicos. (Revista del Museo de La Plata, 1914, XXII, segunda serie, IX, 217-276.)

— El grupo linguístico Alakaluf de los Canales Magallánicos. (Ibid., XXV, 15-69, 1919.)

— El grupo linguístico "Het" de la pampa Argentina. (Ibid., XXVII, 10-85, 1922.)

Lebzelter, V. Beiträge zur physischen Anthropologie der Balkan-halbinsel. I Teil. (Mitteil. der Anthropol. Gesell. in Wien, LIII, 1923, 1-48.)

Radin, Paul. The Winnebago Tribe. (37th Ann. Rept. Bureau of American Ethnology, Washington, 1923, pp. 35-560, 58 pls., 38 figs.)

Reisner, George A. Excavations in Kerma. Parts I-III., IV-V. 2 vols. (Harvard African Studies, vols. V and VI.) Peabody Museum of Harvard University: Cambridge, 1923. xvi, 528 pp.; xxiv, 559 pp.; 78 pls., 26 plans, 345 ills.

Rice, William Hyde. Hawaiian Legends. Bulletin 3. (Bernice P. Bishop Museum, Honolulu, 1923.) 137 pp.

Scheidt, Anthropologie und Rassenbiologie. (Archiv für Rassen- und Gesellschafts-Biologie, 1923, xiv, 416-424.)

Stigler, R. Ethnographische und anthropologische Mitteilungen über einige wenig bekannte Volksstämme Ugandas. I. Teil. (Mitteil. der Anthrop. Gesell. in Wien, LII, 1922, 197-261.)

Tello, Julio C Wira Kocha. (Inca, I, 1923, 93-320.)

Ten Kate, Herman, Aan de chinesische Kust. (Tijdschrift van het Koninklijk Nederlandsch Aardrijkskundig Genootschap, Tweede Reeks Dl. XL, No. 2, March 1923, pp. 97-106.)

Thurnwald, R. Die Gestaltung der Wirtschaftsentwicklung aus ihren Anfängen heraus. (Sonderabzug aus dem Sammelwerk: Erinnerungsgabe für Max Weber. Die Hauptprobleme der Soziologie, 1923, 2 vols. I, 273-333.)

DISCUSSION AND CORRESPONDENCE

PROFESSOR MENDIZABAL AND THE NÁHUAN CHRONOLOGY

While the points raised by Professor Mendizabal in his article in the present number of the *Anthropologist* deserve to be given due consideration, the theory which he advances runs counter to the generally accepted belief of Americanists in several important features. It takes no account of the demonstrated precedence of the Mayan calendar over that of the Mexicans in point of time. It does not bring out the fact that no actual correlation between the movements of Venus and the Mexican calendar has been demonstrated in inscriptions or native manuscripts and that such correspondence as has been noted applies only to the general proposition that eight solar years of 365 days equal five Venus years of 584 days and that both of these in combination with the tonalámatl make a cycle of 104 years. This cycle would be five days out on Venus and twenty-five days out on the tropical year making a total divergence of thirty days in one round. The early Mayan inscriptions show no demonstrable relation to Venus, although the symbol for this planet appears in the later ones.

ERRONEOUS IDENTIFICATIONS OF "COPPER EFFIGIES" FROM THE MOUND CITY GROUP

THE October-December 1922 number of the *American Anthropologist* (Vol. 24, No. 4, pp. 397-431) contains an interesting article by William C. Mills, entitled "Exploration of the Mound City Group, Ross County, Ohio."

Among the illustrations are several of copper "effigies" identified as "eagles." One of these (Fig. 44) has the large eye and short, strongly decurved bill of an eagle and doubtless is correctly labeled. The others, as any ornithologist can tell at a glance, are wrongly identified. Thus Fig. 37, labeled "effigy of eagle heads" shows the small eye and relatively long straight bill, hooked at the tip, of the common turkey buzzard or vulture, while Fig. 46, labeled "effigy of eagle made of copper," has the massive hooked bill, notched and lobed at base, characteristic of the parrots.

In addition to the bird effigies figured, there is a curious elongate object (Fig. 49) called "effigy horn of the mountain goat" which bears no resemblance whatever to the horn of that animal, but which suggests, though it by no means actually resembles, the horn

of a mountain sheep. It may have been copied from some kind of fossil, but could not have been intended to represent the horn of any American mammal.

The misidentifications to which attention is here called are by no means unique, for unhappily the literature of anthropology and archaeology abounds in more or less similar cases.

To a naturalist, the complacency with which certain authors distribute names of mammals, birds, and reptiles in the legends referring to figures on pottery and other objects is truly appalling—and it might be added that the publication of such easily avoided errors hardly tends to inspire confidence in an author's thoroughness. Surely persons familiar with the dominant types of our native fauna are not so scarce as to imply difficulty in obtaining the correct names of most of the animals figured.

I may be pardoned for reiterating what I have said many times before, namely, that since our Indians are born naturalists—naturalists by inheritance and daily association—it seems strange that our schools of anthropology and archaeology fail to recognize the importance of preliminary training in natural history.

C. HART MERRIAM

A LAST WORD TO PROFESSOR DIXON

ON page 109 of the present volume of this review, Prof. R. B. Dixon ends in a personally disparaging way a note in reply to my comments on his criticism of my *Essai sur l'origine des Dénés*. Considering that, in answer to private representations, I had explained to him that my taking his reference to the cultural origin of the Dénés for a hint at the ethnic cradle of the same was due to a mere physical accident—one word hidden, as it were, in a crease of the typewritten copy of his article sent me by an American correspondent, after which I had written while on the wing—I am rather surprised to see that he should resort to a suggestion of dishonorable tactics on my part. The learned professor makes the most he can of that slip, which he seems to give as covering the whole question at issue, and he would fain have us believe that it condones his other strictures on my book. In simple justice to my treatment of those features, which he represents as wholly uncritical, I may be allowed to reproduce herewith what I wrote him on January 3 ultimo.

You do not tire repeating that such and such practices "are so almost universally spread among the uncivilized peoples of the world, that the

fact of their occurrence among the Dénés and tribes in Northeastern Asia has really no signification whatsoever," and that others "are to be found among savage peoples in all parts of the world," etc. Which seems to mean that, according to you and your school of thought, sociology can scarcely be of any value in clearing up ethnographical problems. Nay, you specifically say so in the case I studied when you declare that "the problem of the origin of the American Indian . . . can never be solved by the comparison of a number of relatively superficial or general cultural elements," such, in your opinion, as those I adduced in my little book. Which evidently means that primitive society is the same the world over.

Yet, my dear sir, kindly put yourself in the place of an inquirer who, while familiar with the details of the normal Déné sociology, suddenly comes upon a related tribe which practises the potlatch and follows matriarchy, contrary to what prevails among all the primitive Déné peoples. Will not the presence of those two features in the social organization of that particular tribe immediately suggest to his mind contact with aborigines who exhibit the same? If such is the case between tribes whose habitat is now coterminous, why should it not be so in the case of those who do not at the present time live close to one another?

And then by your generalizations do you mean to say that you see no difference between the sociology of, for instance, the Hottentots and that of the Patagonians, between that of the Bushmen and that of the Plains Indians, who but yesterday were all primitive peoples?

Of course, that may be the case with you, and you are quite free to so believe; but surely you will not insist that all students share your views, or give these as incontrovertible ethnographical rules? Which, however, does not in the least prevent me from attaching but a limited importance to mere sociological items. To me a few really authentic linguistic similarities would in this respect, be far more valuable than the presence of several customs among different divisions of mankind. But I hold that we must take the latter as at least hints at the probability of former intercourse, especially when we have geographical nomenclature (about which I notice that you are again silent) which points in the same direction.

And, pray, do not fail to remark that I would scarcely see any real ethnological value in sociological similarities taken separately as you mention them; their importance lies not in themselves but in their number.

Another point of which I wish to remind you is that I do not give as exclusively Jewish in origin even those practices which I refer to the book of Leviticus—and I cannot help thinking that fairness and impartiality should have made you refer to this. On the other hand, despite your contention that "no one who knows the history of the Asiatic continent can for a moment accept as possible any Jewish influence of moment, except in rather limited areas of its Western edge," I hold that, much over a thousand years ago, Jews were numerous and relatively powerful even in Eastern Asia, nay in Peking itself. Were I not so far away from my books and notes, I could give you of this proofs that would probably surprise you.

Had not this communication become already so long, I might expatiate on your inability to see any ethnographical value in the simultaneous presence

in both the Old and New Worlds of the remarkable legend given and commented on in my Chapter XV. And here I cannot refrain from suspecting prejudice and preconceived ideas. Why, my dear sir, behold two different peoples now living far apart, who possess not only the same legend—

which might not mean much—but a legend which is found with the very same typical details such as the one I quote, and you claim that this means nothing, that it does not hint at any contact or commerce of some sort in the past! Well, pray, how did both peoples happen to get such striking resemblances, nay identities, in their mythology? Was it owing to some kind of revelation? . . . Are these details—not the legend itself—inborn with the human mind, or some sort of natural instinct with man? For their amazing analogy must have a cause. What is this according to you?

A. G. MORICE, O. M. I.

A FURTHER NOTE ON THE
ORIGIN OF THE DREAM DANCE OF THE CENTRAL
ALGONKIAN AND SOUTHERN SIOUAN INDIANS

In the April-June number of the *American Anthropologist*, Dr. Truman Michelson calls attention to a published account of the origin of the so-called "Dream Dance" of the Central Algonkians, in which the statement is made that the ceremony originated from an experience of a young woman of the Sioux about May, 1876. This Dr. Michelson accepts as correct, and says, "In short the ritualistic origin 'myth' is substantiated as history."

As a matter of fact, however, the writer has been informed repeatedly by Menomini that the ceremony was introduced to them by the Prairie Potawatomi as early as 1862. The reception of the ceremony by the Menomini was so enthusiastic as to alarm the timorous agent then in charge of them, who ordered them to cease dancing. This the Indians refused to do, and, finally, on the insistence of the agent, they drove him away with threats. The agent, in a paroxysm of fear, at once wired Washington for troops to put down the "outbreak," and, as it happened that troops fresh from fighting the Sioux in Minnesota (1862 was the year of the Minnesota outbreak), were near at hand, they were at once ordered to the spot.

On the arrival of the soldiers, the Menomini took to their heels, and the soldiers were left wholly unmolested, greatly to the surprise of their commanding officer who had been led to expect fighting of a sanguinary nature. The Menomini relate that he finally captured

eminently a religious and peaceful one. The Indians further relate that he at once requested that the troops be withdrawn, and that this was shortly done, the Indians by this time having returned to their homes and fraternized with the soldiers. It is said that the Government removed the agent on receipt of the report of the officer in command of the soldiers.

The spot where the initial ceremony was held is still pointed out, and the original drum was in the possession of the late Ksewatosa up to the time of his death a couple of years later.

The Prairie Potawatomi declare that the ceremony came from a Santee Dakota girl, but their origin myth gives her an Algonkian name, and seems to make her an Ojibway of Minnesota.

The ceremony is found not only among the Ojibway, Menomini and Muskewaki, as mentioned by Michelson, but occurs also, according to first-hand information, among the Sauk, the Kickapoo, and the Winnebago and Ioway of Siouan stock. I suspect that it is related more closely to the Omaha or Grass Dance of the Dakota than to any other ceremony.

ALANSON SKINNER

OBSERVATIONS ON SAPIR'S "A NOTE ON SARCEE POTTERY"

In Dr. Sapir's opening paragraph concerning the occurrence of Pottery among the Sarcee he states that Wissler makes no mention of the use of pottery among the Blackfoot in his "Material Culture of the Blackfoot Indians." (*Anthropological Papers of the American Museum of Natural History*, Vol. V, pp. 1-175, 1910.) Dr. Sapir is mistaken, because several accounts of Blackfoot pottery making may be seen on page 26 of this interesting paper.

Dr. Sapir also states that "Archaeological findings as to the distribution of pottery in northern Algonkian areas are not corroborated by anything that we can learn from such tribes as the Malecite, Cree, or Saulteaux of today, or that we could have learned from some of them even a hundred years ago."

In this connection I should like to call Dr. Sapir's attention to the following paragraph in the writer's article, entitled "The Northern Saulteaux," Vol. IX, *Anthropological Papers of the American Museum of Natural History*, 1912, p. 130. The information was obtained from some Saulteaux encamped on Lac Seul opposite the old Hudson Bay Trading Post:

Up to fairly recent times pottery was manufactured by some remote bands. Selected clay was dug and tempered by kneading a fine gravel or

coarse sand into it with the fingers. It was then made into rolls and the vessels were built up by the coil process, beginning at the middle of the bottom and winding the coils around outward and upward to make the sides, which were then smoothed over until the appearance of the coils was effaced. When complete, the vessel was dried before the fire. However, firing eventually took place when the vessel was used. In cooking, the kettle was set upright in the sand or propped up with stones and the fire built around it. Some Saulteaux from Trout River near Lac Seul still claimed to be able to make pottery in 1909, but when put to the test they did not succeed. Potsherds are found on some old camp sites in Lac Seul, notably at Manitou Island, but the writer was not able to obtain any at this place.

This description is altogether too circumstantial to be mere guess work or folk-memory on the part of the writer's informants, and it would not surprise him in the least if some of the isolated bands of Saulteaux should be found still using pottery in times of stress.

In a paper entitled, "Notes on the Plains Cree" (*American Anthropologist*, N. S. 16, 1914, p. 82) the writer remarks "In ancient days pottery vessels are said to have been used, but no one now knows how they were made." A few potsherds were found by the writer on what the Plains Cree declared was an ancient camp site of their people on Round Lake north of Broadview, Saskatchewan, and, if he is not mistaken, these were forwarded to the Victoria Memorial Museum with this information at the time.

The Bungi or Plains Ojibway, also called Saulteaux, at Long Plains, near Edwin, Manitoba, were also found in 1913 to possess a vague memory of the use of pottery, but none of the method of its manufacture, so that all knowledge or tradition of its existence and use is not lost among the northern Algonkians. In fact, among none of the Algonkian or Siouan tribes ever visited by the writer has so good an account of the making of native pottery been secured as from the Northern Saulteaux of Lac Seul, Ontario.

Incidentally, the Algonkian names of "Kettle" are instructive. In Ojibway (Saulteaux) we have "akik," in Cree "askik," and in Menomini "akax," all specifically meaning an earthen vessel, although the term is now applied to metallic utensils.

ALANSON SKINNER

BRIEF COMMUNICATIONS

NOTE ON STATE ARCHAEOLOGICAL SURVEYS

Since making the last report for the State Archaeological Surveys Committee of the National Research Council, some additional information has come to hand, indicating gratifying progress in many States. Also, the Committee has been reorganized, as follows: Clark Wissler (*Chairman*), Peter A. Brannon, Charles E. Brown, Amos W. Butler, R. B. Dixon, F. W. Hodge, Marshall H. Saville. The Chairman of this Committee will welcome information from every organization interested in State Survey projects.

New State Societies. Encouraged by the enviable success of the Alabama Anthropological Society similar organizations are being formed in Georgia, Mississippi, and Louisiana.

Illinois. In Illinois, during the current year, Mr. Warren K. Moorehead extended his work on the Cahokia Group, sounding a number of small mounds and completely excavating three of the larger mounds. Nothing was found in the small mounds, suggesting that they are not burials.

South Carolina. A State Survey has been organized by Miss Laura M. Bragg of the Charleston Museum.

Tennessee. The State of Tennessee has appropriated money for the erection of a State historical building. It is the intention to set apart one or more rooms in this building for the housing of the archaeological and historical collections of the Tennessee Historical Society.

Mr. A. F. Ganier, 2507 Ashwood Avenue, Nashville, Tenn., has made a most excellent map of the archaeological remains along the Harpeth River, in Cheatham County, Tenn.

Mr. Charles K. Peacock, department of manual arts, Dickinson, Jr. High School, Chattanooga, Tenn., has been doing a considerable amount of field work. He has made an interesting study of "Fort Mountain," Ga. Fort Mountain is near the point where the states of Tennessee, North Carolina, and Georgia meet.

Messrs. Joe D. Taylor and Henry Woodman, of Bristol, Tenn., have been making a number of field explorations in that vicinity.

Dr. A. Hrdlička, of the U. S. National Museum, visited Bristol and examined a large deposit of human bones found in a burial cave on Holston River, about 20 miles northwest of Bristol.

Mr. W. O. Whittle, Knoxville, Tenn., has been doing field work in his locality.

Mr. Whittle obtained photographs and fragments of the so-called "pictograph wall" near Charleston, Tenn. This "wall" was also visited and studied by Dr. John P. Peters, of the University of Pennsylvania. Dr. Peters found this so-called wall to be up-tilted strata of ripple-marked sandstone. The so-called hieroglyphics he found to be the tracks of ancient trilobites. Dr. Peters reported, in part:

The so-called "hidden wall" is a sandstone dyke. In that immediate locality some internal pressure has driven the sandstone up at various angles and in various directions. The "wall" itself runs north and south about 1200 ft. losing itself in the northern end in a much higher hill, at the south end flattening out into a rounded knob. Toward the westward it descends 150 or 200 ft. into a larger valley. On the east there is a very much smaller valley, the bottom of which is perhaps 50-75 ft. below the level of the top of the dyke.

The rock is sandstone. The force which drove the dyke up operated on the east side regularly thru the whole 1200 ft. of length tilting the strata almost at an angle of 90°, bending very slightly off the perpendicular toward the east. The strata are very numerous, and very narrow, not more than an inch or so in breadth, with an occasional cement-like stratum between, for the most part. They vary considerably in color and in solidity, from rotten rock, which can be almost spaded out, up to the hard rock in the center.

The center strata, by the heat, I presume, resulting from the friction, have been solidified into a hard but very friable sandstone, which breaks up readily on exposure to air in a manner which has suggested to those unused to the habits of this friable rock that the innumerable pieces of stone lying about are due to human workmanship in breaking the rocks to make the "wall." Tipped as the dyke is, the soft strata on both sides have worn down under the weathering, bringing out on the top the dyke of hard stone strata like a wall. At one point on the upper side, and apparently only at one point, on one of these hard strata, there show on the upper or western side innumerable markings of trilobites or other similar creatures. It is here that most of the excavation has been conducted, to a depth of 20 ft. or more and a breadth of about the same. As far as the digging has gone down these markings continue, always on the same stratum and only on the western or upper side of the same. This stratum is separated from the one immediately to the west by a space a little larger than usually separates the strata. Into this crevice has oozed down a decomposition of the soil and the rock above, forming an almost putty-like substance, salty to the taste, which was mistaken by those who found it for an artificial cement. Exposed to the air this quickly hardens and becomes part of the rock to which it is attached, and cannot then be separated from it without breaking the rock. When first taken out, however, it can be readily pried off, and is in some places so soft that it can be taken off like putty with

the fingers. In this clay filling about 10 or 15 ft. below the surface were found two copper chisels. These were made out of copper bars, round, about $2\frac{3}{4}$ - $3\frac{1}{4}$ inch in diameter, one end being hammered out to a flat, sharp surface. The one that I examined had been blunted and nicked in an attempt to cut or break rock. About 100 ft. to the east of this main excavation, on a little plateau or step, part way down the ridge was found a second wall of the same general formation of stone, somewhat variant in color and texture, however. At this point were dug out eight heavy pottery figures, each about one foot in height, human images of a rude type, and one pottery plate with some attempt at decoration. As I have not seen the plate, I cannot describe the decoration which, according to the account given, was not colored, but raised work. Similar figures and pottery have been taken out, I was told, in the Indian mounds along the Hiawassie River on which Charleston is situated, and thru the valley of which one drives in covering the five miles from Charleston to the "hidden wall." The hidden wall is south and east of the valley, about $1\frac{1}{2}$ miles distant from the river at its nearest point.

This wall was first discovered, Mr. Hooper tells me, by his grandfather, in 1891. At that time occasionally Indians would visit the spot which they seemed to regard as sacred. The particular point which was sacred was about where the main excavation has taken place. Excavations to the north and south have revealed the line of the so-called "wall," showing the same geological formation thru-out, but nowhere else have these excavations revealed any markings. I should judge that the Indians had found at this one spot stones with markings, the mysterious character of which led them to regard the place as sacred. Hence on the flat place a little below it are the deposits which have been mentioned of figures and potteries, representing either burials or some form of worship or reverence connected with the place. The two copper chisels found in the cement material between the marked stratum and the one immediately above it would seem to show that at some period Indians had tried to remove the stratum above and lay bare more of the wall, or get out more of the marked stones, the chisels having been dropped thru by accident in that operation.

Photographs of this wall were also examined by Dr. C. D. Walcott, Secretary of the Smithsonian Institution, who likewise identified them as the tracks of trilobites.

Mr. Hiram L. Ridge, 1109 Joseph Avenue, Nashville, Tenn., did a considerable amount of exploration of the ancient stone-slab graves in the vicinity of Nashville.

Messrs. R. H. Gray and J. R. Hancock, of Fayetteville, Tenn., have been instrumental in locating a large number of hitherto unreported mounds, cemeteries, and village sites, in Lincoln county, Tenn.

The writer has been at work on the ancient Indian trails of Tennessee and the adjoining southern states.—W. E. Myer.

CLARK WISSLER

ANTHROPOLOGICAL NOTES

"THE MISSAUKEE ARCHAEOLOGICAL PRESERVE"

A gentleman who does not care to have his name published has given the Museum of the University of Michigan a fund sufficient for purchasing a tract of one hundred and twenty acres in Missaukee County. Upon this tract are two "circles" or enclosures of earth. The dimensions of each are about one hundred and ninety by one hundred and sixty feet. The banks are from four to six feet high, with a ditch or moat upon the outside, from two to four feet deep. The "works" are of considerable age as there are within them, and also upon the banks, pine stumps not less than forty-six inches in diameter. Near the enclosures there are more than a hundred "pits," some of them "confluent," in depth from three to seven feet. There are a few mounds also upon the tract, but, unfortunately, these have been vandalized. The State had several hundred acres of land upon which the taxes had become delinquent, adjoining the purchase, which are added to the tract. No one has at this time an opinion to express as to the Indian constructions and remains upon the land. The object is to save them from destruction and, so soon as opportunity and means permit, to make explorations under trained observers. Of course the earthworks will be cared for and preserved as outdoor specimens of the University Museum. The several hundred acres, which will be known as the Missaukee Archaeological Preserve, also serve as a sanctuary for wild life and are placed under proper supervision and expert control.

W. B. HINSDALE

MR. ALANSON SKINNER, Curator of Anthropology of the Public Museum of the City of Milwaukee, spent several months in the field during the early spring, visiting the Sauk, Kickapoo, and Potawatomi Indians of Oklahoma and Kansas. Mr. Skinner secured a large number of sacred bundles, costumes, and other material from the tribes in question, and on his return brought to Milwaukee with him Wa'pûkā, better known as Sam Bosley, a notable man of the Eagle gens of the Prairie Potawatomi, from whom he obtained an enormous quantity of ritualistic material, together with data on the social and ceremonial organization, material culture and other customs of the tribe. Mr. Skinner also secured the assistance of

an aged Potawatomi named John Nuwi, of Arpin, Wisconsin, from whom much additional data was obtained.

MR. M. R. HARRINGTON of the Museum of the American Indian (Heye Foundation), of New York, spent part of the winter and early spring in the field in the Ozark region of Missouri, and Arkansas, working out rock and bluff shelters in which he found traces of an hitherto unsuspected culture, some of the artifacts including atlatls, throwing darts with cane shafts, hardwood foreshafts and flint points, (but no bows or arrows), splint and cane basketry of southeastern type, woven bags like those of the Central Algonkians, woven water bottles caulked with pitch but few traces of pottery. On the desiccated body of a man were discovered leggings of the spirally wrapped puttee type worn by Pueblo Indian women and moccasins puckered at the toe like those of the Menomini.

At the annual meeting of the Wisconsin Archeological Society, Mr. Alanson Skinner was elected president of that body.

MR. A. I. HALLOWELL has been appointed to the position of Instructor in Anthropology at the University of Pennsylvania.

THE ANGRAND PRIZE has been awarded to Dr. Erland Norden-skiöld.

Following is the list of speakers and of papers read before the Anthropological Society of Philadelphia during 1922-1923:

Oct. 25, Dr. J. W. Harshberger, "Notes on the Lapps and Lapland."

Nov. 23, Dr. W. W. Hyde, "Survivals of Ancient Demonology in Modern Greece."

Dec. 16, Dr. A. A. Goldenweiser, "Early Civilization."

Jan. 17, Dr. R. H. True, "Farming in the Old Stone Age."

Feb. 1, Dr. C. B. Davenport, "Heredity of Build."

Feb. 16, "Indian Night."

Apr. 11, Dr. Waldemar Jochelson, "Notes on the Inuit."

May 16, Dr. R. J. Kellogg, "Some Geographical Aspects of Early Indo-European Dispersion."

A CORRECTION.—In the list of papers presented before the American Anthropological Association at the last annual meeting, (*American Anthropologist*, vol. 25, no. 1, pp. 125-127) a mistake was made in the name of the author of a paper on "The Incidence and Heredity of Facial Hypertrichosis and the Resistance of Hair to Certain Supposed Growth Stimulants." The author of this paper was Mildred Trotter.

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SOME CONUNDRUMS IN NORTHWEST COAST ART

By T. T. WATERMAN

I. ON CERTAIN PECULIARITIES IN THE REPRESENTATION OF THE SHARK

SOME years ago Professor Boas in a classical paper pointed out the stylistic practices and peculiarities which make native works of art on the Northwest Coast so different from our own. One fact very clearly brought out is that representations of animals are recognized by the presence of certain exaggerated traits, or "symbols." Thus representations of the beaver include the conspicuous gnawing teeth, the flat tail, and the characteristic way the animal has of sitting on his haunches and biting a stick which is held in his forepaws. The presence of any one of these means that the carving, no matter what it looks like, "symbolizes" the beaver.

It is also a peculiar feature of this art that it is sometimes difficult to distinguish between carvings representing human beings and those portraying animals.

It is of course to be borne in mind that the Indian has an entirely different philosophy concerning the animals from anything that we know. In the Indian's mind the animal is a powerful being, with supernatural attributes, who is able to turn himself into human form by the simple process of taking off his animal skin. This operation is often portrayed in the myths, where a bear, for example, takes off his bearskin and hangs it up on a peg, appearing then in human form, with all human traits and attributes. When he wishes to be a bear again, he "puts on" his bear-blanket. It is unnecessary to comment at any great length on this matter, because it is a fundamental Indian idea. From the artistic standpoint it has this curious result: an Indian, being

very literal-minded, represents the animal as he thinks him to be. He therefore mixes up human and animal traits in one carving, in what would seem at first glance to be quite a mystifying way. In probably half the carved totem-poles, it is impossible to distinguish whether the subject is a human being or a wild animal, except by looking for the animal symbols. I might add that the principle works both ways. An animal may be carved in human form; and, on the other hand, the carving of a perfectly well-known human being may borrow characteristics from his animal protector.

The limits to which the practice of symbolizing the peculiarities of the animals may be pushed are shown very well by the peculiar way of representing the shark.

The "symbols" which identify representations of the shark are: a mouth curved down at the corners, triangular teeth, curved marks on the cheek (intended to represent gill-slits) and a high, more or less triangular area rising above the forehead. It is the use of this triangular area to symbolize shark figures that I wish to comment on. Some time ago I realized that the explanation of this feature was to be found in a certain drawing reproduced by Swanton.¹ I was so boundlessly pleased at this that I felt it necessary to announce my pleasure in the *Anthropologist*.

Some typical drawings representing the shark are here shown (Fig. 60) after a plate prepared by Boas. No. 1 shows a shark as the second figure from the top of a totem-pole. The "symbols" in this and in No. 2 are fairly clear. In No. 4, only a few "symbols" remain, especially the very characteristic triangular area. Otherwise an observer would scarcely suspect that a shark was intended.

When we compare this curious conventionalized figure of the shark, with a more nearly graphic drawing where the *whole* animal is shown, as in the next figure (Fig. 61), the meaning of the triangular area becomes clear.

This is one of a series of very fine designs reproduced by

¹ Contributions to the Ethnology of the Haida. American Museum of Natural History, Memoirs, vol 8.

Swanton, in the work cited. We are here introduced to a view of a shark from the under or ventral side, with most of the parts in their



FIG. 60.—Drawing showing faces or heads which represent the shark. The triangular area rising above the eyes is a very constant feature of such carvings and drawings, and in this form is very puzzling. From Boas, "The Decorative Art of the Indians of the North Pacific Coast," American Museum of Natural History, Bulletin, vol. 9, pp. 123-176.

correct anatomical relation to one another. Let me remark at once that in this drawing the familiar triangular area suddenly

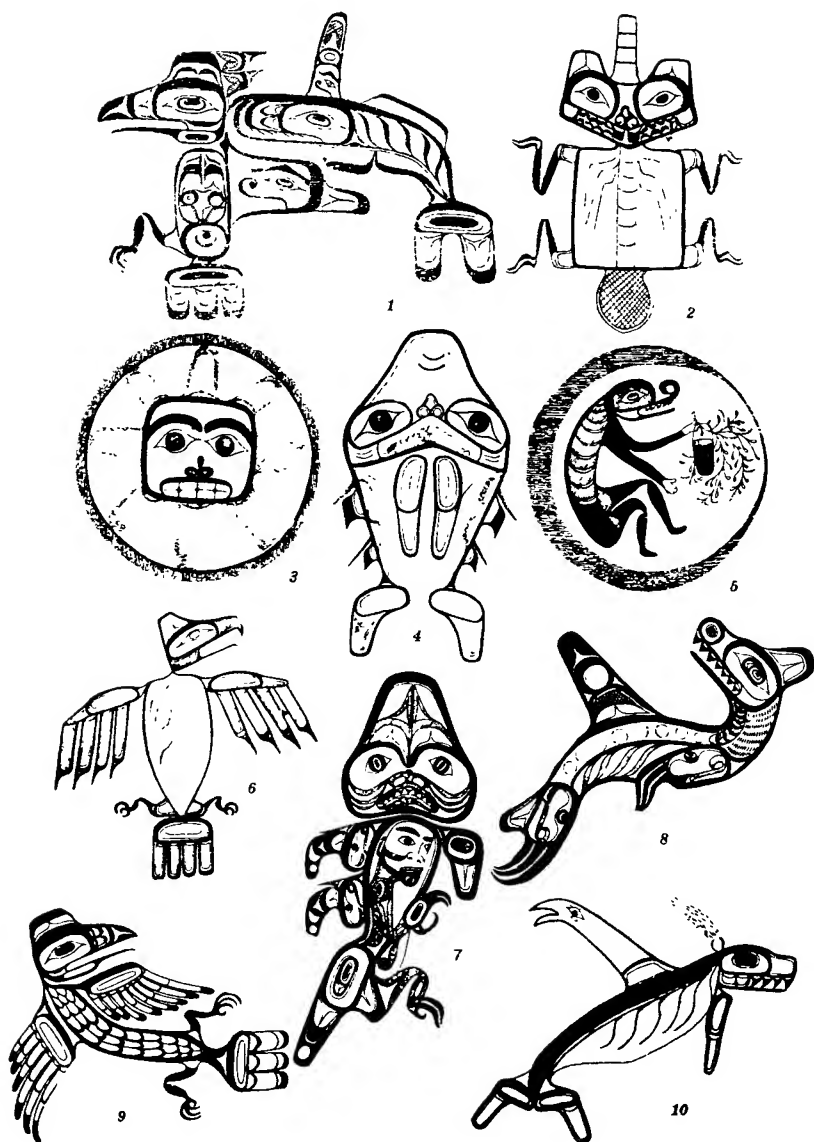


FIG. 61.—Reproduced to show the sketch of a complete shark (No 4) viewed from the ventral side. The eyes have been transferred bodily from the upper surface of the animal, to bring them into the drawing. From Swanton, "Contributions, to the Ethnology of the Haida," American Museum of Natural History, Memoirs, vol. VIII

ceases to need explaining, for it is part of the anatomical outline of the fish, when viewed from this aspect. The mouth and the gill slits are also in their correct position, as are the pectoral fins. In *this* drawing the thing which needs explanation is the representation of the eyes, which do not belong on the ventral side of the animal. The fins at the side of the drawing and the arrangement of the tail also need some comment. There are also two supernumerary gill-slits at the top of the drawing for which there is no justification whatever, except that they fill up space.

It is not difficult to see what has happened with the fins. The dorsal fin, very important to the native artist, would naturally be on the top side of the fish, and not visible. He therefore shows it in two sections, one at each side of the drawing. He could not show it at one side, without sacrificing symmetry. The tail, too, has been shown twice. In actual life the tail of the shark has two lobes, the upper of which, containing the tapering end of the spinal column, is the larger. This characteristic heterocerc tail has, so to speak, been slit and laid open in two halves. Each section is twisted over so as to bring it into view in profile. One tail has thus been shown twice, to preserve the symmetry of the design.

The eyes, finally, have been, in effect, removed from the dorsal surface of the fish, and inserted arbitrarily in his ventral surface, so as to bring them into the drawing. This is in accordance with a common practice of primitive artists, who show what they know is there, not what would be visible to a spectator at a given point. It is the presence of the eyes in representations of the shark that is the element of confusion. Without the eyes, the drawings would readily be understood. While the presence of the eyes violates our notions of common sense, it satisfies the Indian who is moved by another set of considerations. All drawings of the shark, whether crudely or clearly drawn, and whether including the whole length of the fish or just the head end, represent the fish as he would look from the under side, plus the addition of two eyes.

II. HOUSE-PITS

In passing up and down the Pacific Coast, one encounters

among the Indian tribes what seems to be a large variety of types of habitation. My first acquaintance with native houses was among the Yurok in northern California, to which tribe I was dispatched by Dr. Kroeber in 1909. The results of my observations on house construction were ultimately embodied in a paper on Yurok Culture, which has as yet not attained the distinction of publication; it includes some of the points I wish now to discuss. My interest in houses meanwhile carried over, until I chanced to occupy for a time the chair of Sociology at the University of Washington. Here I was enabled, in somewhat brief intervals between classes, to carry on some inquiries concerning habitations among the Salish Indians of Puget Sound. In this area I encountered a very peculiar type of structure, which has been described in a small paper by myself and Ruth Greiner, published by the Museum of the American Indian.² In the summer of 1922, during a brief appointment in the Bureau of American Ethnology, I was sent to examine certain villages on the coast of Alaska.³ This was my opportunity to examine a number of native houses, among the Tlingit, Kaigani, and Nimkish. Some additional information I have dug bit by bit out of the literature. The most systematic accounts of Northwest Coast houses are in various papers by Boas, of which I may mention especially a description of the flat-roofed Songish house,⁴ found about the mouth of the Fraser River, in southern British Columbia. Much of the literature is sketchy and somewhat hard to organize, but references to house architecture go back for a considerable period, through ethnologists like Sapir and Paul Schumacher, to Vancouver and Captain Cook. Detailed references to this literature will be found in a paper written by myself and some student collaborators at the University of Washington called "Native Houses of

² Indian Notes and Monographs, 1921 (Miscellaneous Publications, number 9).

³ Explorations and field work of the Smithsonian Institution, Smithsonian Miscellaneous Collections, vol. 74, number 5, 1922, pages 115 to 133.

⁴ Second general report on the Indians of British Columbia, in the Report of the Sixtieth Meeting of the British Association for the Advancement of Science, pages 62-715, 1891.

Western North America,"⁵ reviewed by Mrs. Leslie Spier in the *Washington Historical Quarterly*. The one peculiar thing in all these houses, from Humboldt Bay in California to Prince William Sound in Alaska, is that they all have pits in the middle. This is really striking, for pits would seem to be of little use in this rainy climate. The houses, at the same time, show a great variety of external features. How to account for their diversity, and at the same time, for the retention of the pit throughout the area, is the problem that interested me.

Difficulties occurred at the outset of the investigation. It was even somewhat difficult to establish the fact that all these houses were built over pits. Hill-Tout in a personal letter denied, with some appearance of heat, that the houses of his Coast Salish *had* any pits. Yet such an archaeologist as Harlan I. Smith⁶ reports the presence of house-pits from this very area. My own eyes informed me that the old village sites in a near-by area were all marked with house-pits. Scattering references in the literature and the statements of all Indian informants point in the same direction. The Puget Sound word for an old village site is *tcetca-alt*, "collection of house-pits." I will concede that the pits in this central area were very shallow, while the houses on the other hand were of immense extent, a thousand feet long in some cases, with a breadth of sixty or more. Under such circumstances, the pit takes on the form of a wide and shallow trench, passing down the center of the structure. I can say without fear of contradiction that, if the particular houses entered by Hill-Tout had pits or not, pits were characteristic of all the other plank houses along this whole stretch of coast.

The external form of the houses gives at first glance an impression of great variety. This impression is confirmed on looking through the literature, for authors give quite confusing and contradictory statements. A study of the older photographs explains this, for practically every one of them, and also, I believe,

⁵ Museum of the American Indian, Heye Foundation, Indian Notes and Monographs, Miscellaneous Publications, number 11, 1921.

⁶ Archaeology of the Gulf of Georgia and Puget Sound. American Museum of Natural History, Memoirs, vol. 4, part 6.

the cuts reproduced in the works of Cook and Vancouver, show at least two types of houses, standing sometimes side by side. I think I can sum the matter up by saying that in the north, and in the south, all the native houses had a *gabled* form, and were very carefully and skilfully built. In the central area (on Puget Sound, around the mouth of Fraser River, and on the west coast of Vancouver Island) houses with flat roofs were found, which were very roughly built. Many even of the centrally located tribes built gabled houses, however, when they felt like it, which apparently was not usually the case. A few tribes, like the Songish, may have built flat-roofed houses exclusively.

It became obvious on comparing the gabled houses of the north and south of this long stretch of coast, and leaving out those in the middle, that many points of similarity existed. In every point, the houses of the central area offered a contrast. I may mention a few of these points of similarity. The gabled house, whether in the north or the south, has the gabled end *facing the beach*. In the case of the shed or flat-roofed house, one long side parallels the beach. The pit in the gabled house is deep, and one descends into it by a *ladder* or *steps*. The pit in the shed house is shallow (which may indeed be incidental) and one enters it by an inclined plane or ramp. In the gabled house there is one entrance; in the shed houses there are usually several openings. The gabled houses are all *carefully built*, with no little ingenuity. The shed houses are put together in a somewhat crazy and helter-skelter way, with a very poor type of carpentry. In the case of the Tlingit in the north, and of the Yurok in the south, every house has a *name*. The extent of this custom I do not know. House names are widely used in the north, less widely employed among the tribes of the south. In the center, the area of shed houses, names for houses are unknown. I have supplied elsewhere a list of Yurok house names from northern California,⁷ and Swanton gives a very picturesque list of house names from the Haida.⁸ I may say concerning these lists, that

⁷ Yurok Geography. University of California Publications in American Archaeology and Ethnology, vol. 16.

⁸ Contributions to the Ethnology of the Haida. American Museum of Natural History, Memoirs, vol. 8.

many Yurok names are practically duplicated among the Haida; though the Haida have many high-sounding names, and names referring to totemic crests, which would never be found among the Yurok. Concerning the tribes between the Haida and the Yurok, I have nothing to say, as the distribution of this custom has not as far as I know been worked out. The similarity in this custom at the two ends of the coast area could hardly be accidental. The difficulty of finding out what the custom is in this matter is an indication merely of how poor the literature is, and how carelessly and spasmodically inquiries have been carried forward. This matter I have illustrated somewhat further in the paper already mentioned.

The simplest explanation for conditions as we find them seems to be that one type of house, namely, the gabled type, was formerly distributed along the whole coast. This continuous distribution has been interrupted in the central part of the area, around the southern end of Vancouver Island, by the appearance of a different and cruder type of house, represented by the flat roofed structures at the mouth of Fraser River. If pressed for an explanation, I should be inclined to fall back on the familiar hypothesis that there has been an inroad of Salish people into this central area, who brought in a simpler culture, including simpler and cruder ideas of architecture, from the interior plateau. All the facts, it seems to me, would fit in very well with this presumption, which may be regarded as rather well supported by all facts, cultural, linguistic and archaeological. This matter has been discussed by abler students elsewhere, particularly by Boas.

With the *forms* of habitations explained in this way, we have still to explain the presence of pits. I never met an Indian who could explain why his people made pits as part of the construction of a house; and my own ingenuity is not active enough to enable me to invent any practical reason. Both the Yurok and the Haida, to mention two typical tribes, sleep outside of the pit, the Haida boosting themselves up on to sleeping platforms. If there is no practical reason, and there is nowhere in the literature, I believe, any practical reason proposed, we are safe, it seems to me, in assuming that the pit is a survival from some other form

of structure. Here the study of distributions seems to provide an answer to the question of where and how the pits originated. The area of rectangular plank houses with pits is entirely closed in by tribes which build underground houses of poles, with the entrance through the smokehole, houses which are covered over with earth. This area of pit-dwellings with roofs in the form of a cone, and the entrance at the top, is continuous, from the Aleutian Islands and the west coast of Alaska, down through the interior of British Columbia, Washington, and Oregon, to the central part of California, reaching the coast at one spot north of San Francisco Bay. In the area we are now speaking of, there is ample reason for people to dwell in pits. In the north, the climate is rigorous enough to fairly drive people underground, and, in the whole of the area, protection is to be sought rather against cold than against rain. This whole area is either extremely cold, or very arid, sometimes both.

It is to be admitted that the present day dwellings, or what is left of them, even in this area do not show any great uniformity. The houses on the Aleutian Islands today are not entered through the roof, nor the present-day houses of the Alaskan Eskimo, which are too well known to need comment. When we appeal to historical evidence, however, the case becomes much more convincing. The drawings of Aleut habitations in the folio accompanying Cook's Voyages, show Aleuts living in a genuine earth-lodge, with a notched ladder leading up through the smokehole, in a fashion that is as nearly identical with usage among the Shuswap or Lillooet as anything could be. Eskimo lodges as portrayed in these early voyages, and those figured in Nelson or Murdoch, are very different things. The early drawings show lodges heaped over with earth, with an opening in the roof, directly in the center, with a ladder leading down into the interior. Since in this cold area, which shades off into an arid area in the south, pits are functional in habitations, and since the plank houses of the adjacent coast area are palpably recent, along with the rest of the highly specialized coast culture, it seems to me we can best explain the coast houses with their pits as a transformation of a genuine pit-dwelling, on the part of a people who

learned to make planks and plank houses, as the result of a peculiarly rainy environment with numerous and very large trees.

If the pits in the rectangular plank houses of the Pacific Coast are not survivals from pit-dwellings, they may be set down as constituting the most mysterious phenomenon in the whole of ethnographical literature.

III. TOTEM-POLES

After reading a large part of what has been written on totem-poles in the books, I found myself wondering still what a totem-pole was. As far as the poles of the Tlingit are concerned, I satisfied my own curiosity by conversation with the Indians. I had previously been told, among other things, that totem-poles represented "family history." This phrase is somewhat misleading, for totem-poles represent not really family history, but family tradition. They show a very large number of carvings which refer to mythological events; such as, the theft of daylight from its owner, and the introduction of the light into this world by Raven, who is the legendary ancestor of half the Tlingit; or the story of a hero called Kats!, who turned into a bear. Such matters cannot be called history, family or otherwise. It is commonly stated that the carvings on poles are the *crests* of the owner. This would indicate that they are handed down by descent, which again is hardly a fair statement of the facts. Totem-pole carvings may be executed to order, and have no relation to the individual's ancestors, or his descent. For example I have seen poles portraying subjects like St. Paul, Czar Alexander of Russia, a Secretary of the Interior, and a ship in full sail. The *subjects* in these cases are obviously due to contact with the whites, but the *method* by which these carvings arrived on the poles was exactly in accordance with primitive usage.

Speaking now of the Tlingit, and not of other tribes, I may sum the matter up by saying that a pole is, *mutatis mutandis*, a gravestone; that the *word* for totem-pole is the word used by the modern Tlingit for *coffin*; and that the carvings represent the individual's claim to fame, whatever that claim may be. Taking these points up in the order named, I may say that the Tlingit

totem-pole is always a memorial column standing as the reminder of a deceased person. The Haida and the Tsimshian may have other ideas. It was not possible to make the necessary inquiries among those peoples. The totem-pole is to the Tlingit what a gravestone is to us; though they are not set up in cemeteries. The Tlingit totem-pole is called a coffin (or, to put it the other way around, if you like, the modern coffin with silver-plated handles is called a totem-pole) for a simple reason. The ancient pole was a depository for the remains of the dead. A recess was provided, usually in the back of the pole, in which the cremated remains of the deceased were put. In nearly all the Tlingit poles standing at the present time such rectangular cavities are visible. I have seen them in all the Tlingit towns I visited, and have photographed some of them. A white person removed a mummified head from the cavity in such a pole, shortly before I arrived upon the scene. In one case, at the Tlingit village of Tuxekan, the ashes of a woman were deposited within the horizontal effigy of a killer-whale, and silver-plated coffin-handles were then screwed on the effigy. While the totem-pole is for this reason called by the word meaning coffin, it obviously corresponds rather to the monument which we set up, as a visible reminder of the departed, his virtues, his name, his rank, and his achievements. The poles were set up, not in a graveyard, but along the village front, each pole in front of the owner's house, in which in many cases his surviving relatives or heirs are still living. These people reckon descent through females, not males. A man and his wife belong to different totemic groups, and a pole is regularly set up, not by a man's sons, who belong with their mother's people, but by his sister's sons, who are, according to Tlingit usage, his nearest actual relatives.

The only matter remaining to be discussed is the way in which the carvings come to appear on the pole. If a person's maternal uncle possessed a certain crest, that crest would be assumed at the proper time by the person himself, with the uncle's other property and privileges. Anything else which tended to set a person off from the remainder of the tribe might be assumed by that individual. Thus with the carving of a full-rigged ship.

The old Indian whose memory is preserved by that pole was the first Indian in the immediate region to see a European vessel. A rich old man at Tongass village once acted as host to a Secretary of the Interior, when this dignitary came to Alaska on a visit. The Secretary was invited to sit on a pile of fine furs, when he came into the Indian's house. At the end of the interview, he was told that he was "forgetting" his furs. "It is the custom of our people," said the old chief proudly, "that what a visitor sits upon is his." When in later years the pole was raised, the Secretary was put at the top of it, in a frock coat, a stove-pipe hat, and checked trousers. This seems ridiculous, but is exactly in line with the ancient customs of these people. A feast was given when a pole was set up, at which great quantities of property were given away, an occasion known now as a potlatch. The rank of the family was greatly increased by this means. The size of the pole and nature of the carvings were correlated with the greatest nicety to the total cost of the feast. A man might, I suppose, have assumed carvings without a potlatch, but he would have made himself a laughing-stock, as one of us would by wearing a silk hat to a ball game, or gum boots to a wedding, or anything else incorrect or in poor taste, which makes people smile. Certainly an Indian would have put himself in the hands of his enemies by assuming anything to which he could not establish his claim by a proper potlatch.

An old Indian, a member of the Bear group, at Tongass village, once gave a great feast and invited a Killer-whale chief from Wrangell. This chief fell upon evil days, became "hard up," and never gave any feast in return. A totem-pole was finally erected by the first chief's nephews, with a carving showing the uncle's Bear crest *biting the fin of a killer-whale*. The Killer-whale people at Wrangell were furious at the slight, but the chief was by this time a drunken loafer, without property, so could do nothing about it.

If in the old days a visit to the Russian cathedral at Sitka and conversion to Christianity entitled an Indian (after the proper expenditure) to make a carving of St. Paul, copied after an illustration in an old Russian Bible, and to place the saint on a

totem-pole (all of which has happened) it is obvious that the variety of carvings on the poles is almost bewildering. No one can tell exactly what all the carvings represent, except some one conversant with the history of that particular pole. It is a great pity that these poles are rapidly decaying, without a record being made of their meaning. A collection of the mythical tales of the region could easily be gotten together and illustrated throughout with carvings from the old poles. I found it very difficult in some

cases to get any information at all about the older and finer columns, some of which are real works of art.

IV. THE FORM OF THE OBJECTS KNOWN AS "COPPERS"

Another matter which has always intrigued the present writer is the shape of the well-known sheets of copper, often described and figured, which are traded about in the "potlatches" of this region. An account of the coppers, and the way in which they are "named," has been supplied by Boas.⁹ Their shape is very striking (Fig. 62). Why among all possible shapes they should assume this particular one has always been a puzzling query.

On the recent field trip to Alaska for the Bureau of American Ethnology, I took the opportunity to inquire about this, and received a very curious answer.

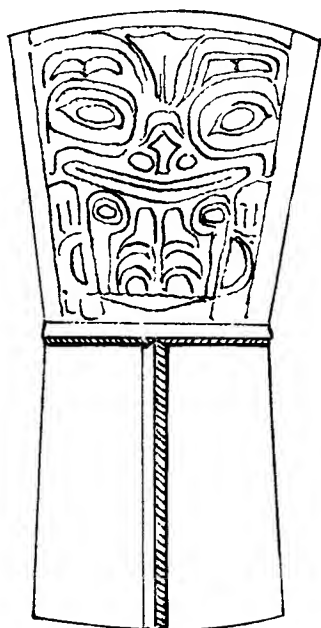


FIG. 62.—A "copper." Certain of these objects, depending on their history and reputation, were worth the equivalent of two or three thousand dollars in our coin. From Boas, in "The Social Organization and Secret Societies of the Kwakiutl Indians," Report of the U. S. National Museum for 1895.

⁹ On the Social Organization and Secret Societies of the Kwakiutl Indians of Vancouver Island. Report of the U. S. National Museum for 1895, page 341 ff.



FIG. 63.—Photograph of the Kaigani village of Kasaan, southeastern Alaska, made by Lieutenant Emmons about 1885 (reproduced by courtesy of the Smithsonian Institution from "Explorations and Field-Work of the Smithsonian Institution in 1922," p. 123). This village, after having been set aside as a national monument, was destroyed by fire. The carving at the bottom of the pole at the extreme right represents the Gonaqadēt.

To understand their shape it is necessary to refer to the mythology of the region. These people, as is well known, lay tremendous stress on the possession of wealth. The accumulation of property stirs them to their foundations, and religious ideas get mixed up with the pursuit of gain, in an emotional complex, or obsession. There are ways of becoming rich through the supernatural. Thus, there are "property spirits," almost deities, the very sight of which makes one wealthy. One is called Property-

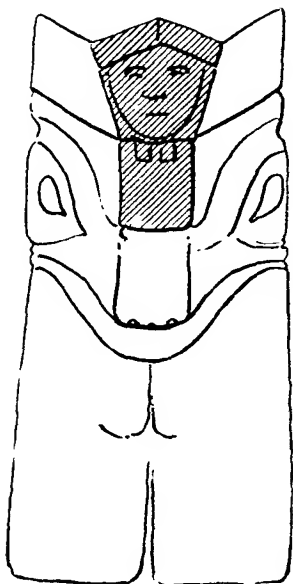


FIG. 64.—The "Gonaqadēt," a mythical monster, the sight of which makes a man wealthy. The form of the "copper" symbolizes the forehead of this monster, as shown in the sketch.

I was much interested to learn that the form of the copper, in the opinion of the Indians, represents the forehead of the Gonaqadēt.

To illustrate this matter, let us look at a typical carving. The photograph is from a Kaigani town called Kasaan (Fig. 63). I happen to have no Tlingit photograph at hand which illustrates

woman, who goes about in the woods with a crying child, occasionally scratching the trees with her copper nails. Merely to hear the crying of her child causes a man to be rich. There is also a great being in the sea who bestows on people great wealth. He is called the *Gonaqadēt*. His appearance is like unto that of a great bear, but he lives beneath the water. Sometimes he appears to lucky men, far out at sea, emerging slowly from the waves and towering above them. He is so big that he looks "like the side of a house." Anyone to whom he appears acquires sudden riches. This monster cuts a great figure in the myths of the region, and is often portrayed on totem-poles. Certain families inherit the Gonaqadēt as a crest. In the carvings, great ears arise above his head (as is always the case with representations of beasts) and, for a head-dress, he wears a living creature.

the point. In this photograph, the lowest carving on the nearest pole represents the monster in question. The rectangular part of the copper (the lower part) represents his frontal bone. The flaring part of the copper represents the space between the monster's ears. The "face" which is usually painted on this part of a copper represents the monster's animal head-band. In the photograph, there are two broad bands above this smaller head, sloping down toward the tips of the monster's ears. These are represented by the top margin of the copper.

After looking at representations of the Gonaqadēt, it can be stated with assurance, I think, that either the form of the copper represents the forehead of the Gonaqadēt, *or* the forehead of the Gonaqadēt has assumed the likeness of a "copper" (Fig. 64). It would be impossible to say, *a priori*, which has happened. One is as likely as the other. My Tlingit informants felt that the form of the coppers symbolized the forehead of the wealth-giving monster, the prodigy whom they had heard about in their mythical tales.

MUSEO NACIONAL,
GUATEMALA

MISTASSINI HUNTING TERRITORIES IN THE LABRADOR PENINSULA

By FRANK G. SPECK

IN the interior of the Labrador peninsula lies Lake Mistassini, a body of water estimated to be from 75 to 100 miles long and 15 miles wide. The region can be reached from the outside world only by a journey from Lake St. John, a Hudson Bay post and railroad terminus, of from 18 to 22 days in summer by canoe and a similar journey by dog-sled in winter; or by voyaging, as is sometimes done, from the Hudson Bay post at Rupert House on James Bay, which is about the same distance.

Lake Mistassini and its human inhabitants are practically unknown to the world at large. The Jesuits are believed to have penetrated thither about 1643 and continued contact through 1674 under Albanel, and since then the factors of the Hudson Bay Company have long had their trading post on the southwest corner of the lake, the earliest actual date for that at Mistassini being 1733. But no investigators except Michaud, 1782, and the parties conducted by Low, from 1885 to 1896, studied the region or mapped its surface. Occasional sportsmen and adventurers, too, have reached its shores and some have published narrative accounts of their adventures, but no ethnologist has thus far taken up the task of studying the language or customs of the natives.

Lying parallel to and south of the immense body of water forming the Grand Lac Mistassini, as it is called, lies a smaller and similarly conditioned lake known as Little Mistassini. On the northern shore is a large rock forming a spacious cavern at one side. This rock has given a name not only to the lake but to the Indians whose homes and hunting grounds stretch for several hundred miles north, and northeast. The purpose of this brief account is to make available the information acquired by the writer from 1915 to 1923 on the family territorial divisions of this

interesting band. My first contact with Mistassini Indians was in June 1915 when a number of families had descended from their hunting grounds and were gathered for their annual trading period of two weeks at the Hudson Bay post at Lake St. John. With the indispensable aid of Joseph Kurtness and his father, both of whom were native members of the band, I began my social-economic survey. Since that year the Mistassini people have descended from the interior to Lake St. John in larger numbers each June and with them came the opportunity to expand and test the information about hunting locations and their names. It should be noted that changes seem to occur from year to year which would make the results of a survey made in one year appear different the next, due to death, relocation, and inheritance. For the period covered, however, I feel that the survey given by these informants is as reliable as it could be made, considering the imperfections of existing charts, without actually traveling out through every district. And I hardly need add that to chart and traverse the habitat of a few of these bands would take a lifetime.

In fact, in the whole northern Algonkian area this kind of survey must be repeated each generation or oftener for each band before we can test the form of inheritance and know the social processes involved in the disposition of lands and privileges among the hunting peoples of these regions.

According to information obtained from a Cree of Rupert House and from Indians who have visited at East Main, the Mistassini band is not specifically differentiated in any way from the groups whose trading headquarters are at Rupert House and at East Main River some 75 miles north of it on James Bay. Culturally and linguistically there is the closest similarity between them, and were it not for the separate habitat, the separate headquarters, the separate chieftaincies, together with a certain consciousness of independence of each other, there would be little need to employ different designations for the three bands. Such dialect and culture groups characterized by minor points of specialization occupy practically every large stretch of habitable country across the sub-Arctic region, their central gathering places

having been, as they still are, on the largest lakes or the embouchures of the largest rivers, on salt water if possible, leading out of their immense hunting ranges in the interior. Just as the Indians on Marten River and Rupert River emerge from the interior in the idle summer season to fish, trade and socialize amid the plenitude of the seacoast at Rupert House post, so do those about Lake Mistassini foregather at the southwestern end of the great body of water at the post there, while those about Lake St. John descend to the post located at Pointe Bleue. The same spring movement takes place on eastward down the north shore of the St. Lawrence from Tadousac to Natashquan and St. Augustine at some seven or eight locations of similar importance.

Returning to the Indians who form the Mistassini band, we find that they call themselves *Mictacini-wi i-nuts*, "Big Rock People," deriving their identity from the landmark previously referred to on the shores of Lake Mistassini. By the same name, with dialectic variations, they are designated among the neighboring Indian bands as far as they are known. In 1915 and again in 1921, when in conference with representatives of five of the Mistassini families who put in an appearance at the Lake St. John post, I obtained an estimate of their number at 187 souls, 60 of them considered as grown men, constituting 31 families. From four to six families are accustomed to descend annually to Lake St. John to trade, but most of the band resort to Rupert House for that purpose. Regarding the numbers of this band, it is difficult to get at definite facts since the mortality is high, and so through accidents and famine the population rises and falls from year to year. In the nineties a few remarks were published concerning this band by Low,¹ who, however, did not have intimate contact with them.

Low stated in 1896 that there were about twenty-five families here. He mentions the spring descent of the Mistassini men,

¹A. P. Low: Report of Explorations in the Labrador peninsula etc., in 1892-93-94-95, Geological Survey of Canada, Ottawa, 1896, pp 70, 71.

about June 20th, to Rupert House and their return August 20th, saying, "As nearly all the women and children accompany the large canoes in their small craft, very few persons remain about the post during the summer. Those who do live altogether on the fish caught from day to day."

In view of its being so little known, we may remark first of all that the general life and culture of this interesting group is marked by a laudable and intelligent conservativeness. The Mistassini are clean and robust and appear very healthy and well conditioned for people whose whole life is passed in the remote bush. Their manufactures are everywhere in demand, even among neighboring Indians, on account of the care and finish with which they construct the various useful articles necessary to a life in the sub-Arctic zone. As toboggan, snowshoe and canoe makers the Mistassini are enduringly famous. Their red slate pipes inlaid with lead decorations are traded as far away as the St. Lawrence. They are also connoisseurs and possessors of fine dogs. The camps of this people (Fig. 65) are more commodious than those of the Montagnais. Their art work is exceptionally fine, both the beadwork and the ribbon appliqué embroidery. The technique of their birchbark baskets and receptacles exceeds that of the Montagnais south of them, and they employ paint as well as etching in their ornamentation of birchbark. A similar excellence in durability and taste pervades their leather work, moccasins, skin bags, pouches, and receptacles. In short the Mistassini inhabit a more rigorous zone than do the Montagnais and they have responded, for some reason, in a fuller degree to practical needs as well as to aesthetic impulses. They offer indeed one of the best opportunities for the study of a northern, limited nomadic, culture group. Although a representative collection of ethnological material has already been obtained from them, in the interests of the Heye Museum and the American Museum of Natural History, the task is one that will still need years for its completion.

The mental life of this band is interesting and important. Religious behavior is chiefly, one might say almost exclusively, concerned with propitiation of the spirits of game animals by the proper treatment of their remains. The bear and beaver are es-

*a**b*

FIG. 65.—A camp (*a*) and meat drying scaffold (*b*) of Mistissini Indians at Pointe Bleue.

pecially important in this regard. Communication with animal spirits is mainly through dream visions, which constitute the basis of individual religious performances. Beliefs and rites are highly individual in character, and they constitute secret personal property. I have already presented a short report on one aspect of individual religious practice.² Shamanism still exhibits a comparatively rich development. The organization of the midèwin of the Central Algonkian seems not to have penetrated as far northeast as Lake Mistassini, nor has any similar institution been evolved among the tribes of this region. It would seem from this, incidentally, that the midèwin may not be older than the Algonkian dispersal period.

The Rupert House Indians occupy a wide territory as the western neighbors of the Mistassini, who are culturally closely related to them. They, and also the East Main band, were visited by Skinner at their post on James Bay in 1908 and some of their ethnology was recorded by him under the name of eastern Cree.³ For dialectic reasons the Rupert House and East Main Indians should be identified with the Mistassini and Montagnais. Their territorial boundaries have still to be investigated.

It might be remarked advisedly of these bands that the application of the term Cree to them is somewhat artificial. It denotes an affiliation which hardly exists either in a political or social sense and a classification, furthermore, which is misleading to the ethnologist. Their dialectic peculiarities seem to bear more toward the interior inhabitants of the Labrador peninsula to whom



FIG. 66.—Mistassini girl and child in baby-sac.

² F. G. Speck and G. G. Heye: *Hunting Charms of the Montagnais and Mistassini Indians*. Indian notes and Monographs, Museum of the American Indian, N. Y., 1921.

³ A. B. Skinner: *Notes on the Eastern Cree and Northern Saulteaux*. Anthropological Papers of the American Museum of Natural History, N. Y., vol. ix, part 1, (1911).

the designation of Cree has never been applied. In view, therefore, of our present ignorance of the culture and speech of the immense eastern Labrador region, it would seem to me preferable not to specify too much in respect to relationship by the use of general names which imply definite connections, but to employ independent band or group names until we actually know the distribution of familiar traits over regions as yet ethnographically unexplored.

On the northwest, located above the Rupert House band is the small and almost unknown East Main group. Low, in 1896, said of this band that there were only a few families who hunted along the lower part of East Main River. A wide interval along its course, from Lake Nasaskwaso to below the Great Bend, he reported as totally uninhabited. Previous to 1889, he adds, there were three families who hunted in the neighborhood of the Wabamisk River, but during that winter they all perished by starvation or cannibalism with the exception of one woman and a small boy.⁴

The Mistassini Indians maintain interesting economic relations with their immediate neighbors toward the northeast, the people of the Nichicun band. The families of Mistassini located on the northeast coast of the lake pass part of their hunting season near the shore, and then place some dependence upon getting porcupine in times of food shortage. For porcupine they have to proceed a little way up the long rivers which flow down from the northeast. Should they, however, fail to encounter a supply of this rodent, whose numbers seem for some reason to be diminishing in the Labrador peninsula, they are compelled to pass far into the higher land for caribou, sometimes moving so far in this direction that they are on the preëmpted territories of hunters of the Nichicun band whose districts are in turn located southwest of their own lake toward Lake Mistassini. Reciprocal privileges have, in consequence, seemingly developed between the two bands, for when pressed by famine in summer the Nichicun people assume the right to descend the rivers toward Lake Mistassini and hunt bears

⁴ Low, *op. cit.*, p. 85.

on the Mistassini territories. For this reason the territories, numbers 23 to 30, have been elongated toward Lake Nichicun, and we may imagine, with good reason I believe, that if the land divisions of the latter ever become known, they will meet and overlap the Mistassini tracts.

On the southwestern Mistassini frontier there is some overlapping of claims indicated by information coming from hunters of the Waswanipi Lake band. It would be impossible to adjust such differences until accurate charts are before us in the presence of the informants.

With the Hudson Bay Company post at the foot of the lake, the Mistassini were concerned in a manner which shows that the institutions of the family hunting ground must have existed before the post was laid out and founded. The company controls a tract about the post, No. 33 on the chart, upon which the employees of the post and their families live and hunt. They are for the most part half-breeds. This tract was originally acquired by the company for the support of its attachés. That the Indians had an idea of proprietorship in this tract is shown by the fact that about 1912 a dispute arose between the factor and three hunters of the *Pitwâbenu* family (No. 6), whose range adjoins the company's holding, over the killing of two moose on this district, to which the Indians laid claim by the right of prior possession. The killing of game on the ground was objected to by the company factor, but without success. I mention this to answer the possible question as to whether the appearance of the great company in the far north could have been an agent in the instruction of the Indians along the lines of territorial family subdivisions. It is quite evident, I believe, not only from the widespread nature of the family land divisions throughout the north, but from the testimony of history itself, that the coming in of the trading posts was not responsible for the inception of the territorial idea, but that they came in and adjusted themselves to such conditions, which were aboriginal to the northern tribes in general.

Bearing upon certain detailed aspects of the operation of inheritance, trespass, territory marking, transfer, and so on, we have all too little information. For the conditions under which

these Indians live do change so rapidly that it would require a much longer contact with them than I had to investigate circumstances like the above which could only be explained by individuals through memory and through their own experiences. I may say, nevertheless, that later the personal inquiry method must be employed, but pending the completion of this work, which will involve considerable time, it would seem necessary to give a few general outlines of the practices connected with the operation of the hunting grounds as offered by the Indians themselves.

Among the Mistassini there seems to be no method of marking the boundaries of their territories by blazes or other landmarks. They claim that these are unnecessary on account of their intimate acquaintance with the country and with their trapping grounds. Trespass, too, seems to be little regarded, for there are no specific cases where trouble has arisen through it. Conjuring is employed as a punishment for trespass on others' grounds. One feature of importance, however, is the occurrence of names designating the areas controlled by different families. These with their translations are given in the ensuing list on pages 466, 467 in the third and fourth columns. If we regard the family districts as geographical units, then we may refer to the toponyms as being something like canton names. Like the other ethnic groups north of the St. Lawrence the Mistassini refer to their hunting grounds by using the term *nəmēckənu*, "my path, or road," as though their business of life lay along the well-known track over which they pass in canoe and with sled in setting their traps and killing the meat- and fur-producing animals. The term *otestci*, "his land," is also given. South of the St. Lawrence among the Wabanaki divisions the corresponding term is *nzi'bum*, "my river," through analogous reasoning. I believe, from what I have seen, that it may be truly said of the more northerly tribes that they employ winter land routes more extensively, due to their ownership of dogs to aid them in traversing the country. South of the St. Lawrence dogs never came into use for hauling the sled or toboggan. This strikes me as an important fact in the consideration of Eskimo contact and economic development among the Algonkian.

I must explain, before proceeding to greater detail, a condition

which applies especially to the boundary lines as given for the districts in the northwestern portion of the Mistassini habitat, numbers 9-22 especially. The boundary limits are only approximately located and can obviously be intended to give but an idea of general location and adjacency to each other, because this country is still unexplored except along the main river courses. Where the chart appears blank there are of course innumerable lakes, streams and geographical landmarks fully as prominent as they appear in the well-known sections. The location of number 18, for example, is only conjectural, since the Indians know that it is interposed somewhere between number 19 on the east and 14 and 15 on the west. The natural landmarks of course are known to the proprietors and their neighbors, but since these appear on no charts it is impossible to project division lines which will conform to them. In short, the institution which we are endeavoring to comprehend exists in great explicitness in the minds of the northern Indians, a state which we are totally unable to describe for the want of adequate means at our disposal in respect both to cartography and to knowledge of actual conditions, reactions, and even terms to employ in the attempt to express the circumstances of the economic struggle of a hunting horde.

It will be noticed at once by anyone who has considered the size of the hunting territories in regions more to the south, and more thickly populated, that the Mistassini territorial blocks are comparatively large. Most of them are about half as large again as those of the Lake St. John Montagnais, with the exception of a half-dozen of the latter which are locatedad joining those of the Mistassini people and just south of the Arctic watershed. The same observation holds true here as in the case of the Lake St. John people, the farther north the larger the territories and consequently the thinner the population. From comparisons with hunting districts and human distribution here as well as through Maine, New Brunswick and Newfoundland, we may almost develop a law among the north Algonkian, along with this appearance, and add that the direction of migration seems, where we have any traditional testimony or historical reference, to be toward the most sparsely inhabited belt. In the Labrador peninsula this is ever toward the northeast.

The sociological behavior of the Mistassini in respect to the family hunting lands resembles considerably that of the other Algonkian of the sub-Arctic zone. We find the tendency present to use family patronyms, though its practice is corrupted by the use of individual nicknames which outnumber personal names of any other type. From these of course grow new paternal names

which may live for a generation or so and then be replaced. Evidently this has been the procedure of the past. As elsewhere, also, baby-talk is occasionally the basis of personal naming. Inheritance of hunting privileges comes down through the father and lasts as long as the sequence of occupation is maintained. Hunting companionship usually includes father and sons, though the regular form of this natural grouping is generally broken up by local social circumstances. The most prevalent of these is the residence of the married man with his father-in-law. This tendency is most interesting in point of theory, for one could imagine that where this practice prevailed over others in respect to residence and its implied inheritance, an alternating, even a matrilineal descent

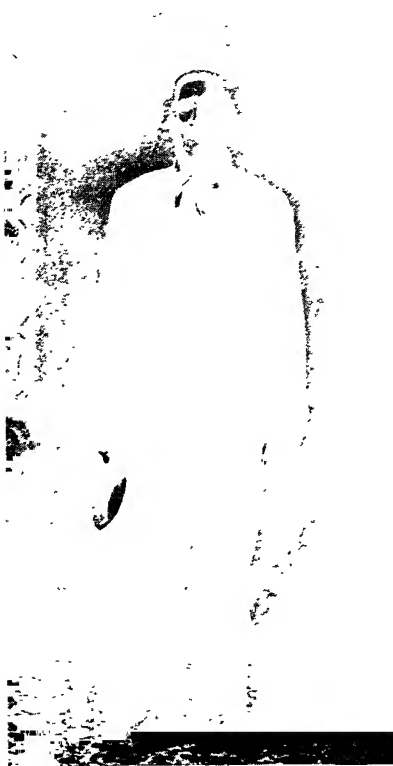


FIG. 67.—Meta'bi, former chief of the Mistassini Indians.

might evolve in a few generations of its regular performance. It appears from our information that in the present generation there are six definite instances of hunters residing on their paternally inherited grounds, and six, possibly seven, where the hunter, having married, has joined his father-in-law's group.



FIG. 68.—Mistassini Types: *a*. Charley Mianshkam and his son; *b*. Sandy Shekapeo; *c*. wife of Metowesheesh and widow of Johnny Washeesh; *d*. Tommy Moar of the Hudson Bay Company's Post at Lake Mistassini. His father was German and his mother of the Nichicun band, *e*. A Mistassini girl; *f*. Ka'kwa, a former shaman of the Mistassini; *g*. Son of Ka'kwa, afflicted with a limb deformation occasionally met with in this region; *h* and *i*. Towe'qadjic, "Clear behind," a son of Joseph Gunner (Fig. 69).

The high mortality among men, due to exposure, and among women and children, all due to the failure of the game, is a noteworthy consideration, and one to be taken seriously into account as a factor governing the distribution of the people and the residence of the sexes. We find among the reasons given by the Indians for their residence with the father-in-law, after being married, first the necessity of rendering aid to him, should he have too few sons or none at all through these fatalities, second, that of avoiding overcrowding in a family of too many sons, should they be living and working the paternal holding. And there are besides other minor personal reasons which can just as well be imagined by anyone who has lived with similar people.

The control of the hunting grounds is deeply involved with religious thought. Some of the interesting viewpoints taken down in text from *Ka'kwa* (Fig. 68, f), an old Mistassini shaman who died several years ago, explain how the proper disposal of animal remains is obligatory among the hunters. By conforming to a number of arbitrary regulations, semi-religious in character, the hunter satisfies the soul-spirit of the game he kills. Should he fail to observe these formalities an unfavorable reaction would also ensue with his own soul-spirit, his "great man" (*mistape'o*) as it is called. In such a case the "great man" would fail to advise him when and where he would find his game. Incidentally the hunter resorts to drinking bear's grease to nourish his "great man." There is an Eskimo analogy in the belief that at least two classes of game, the caribou and the fish, have their supernatural controllers whose favor determines the hunter's success. The discussion of this aspect of life, however, belongs in a somewhat different setting to be dealt with independently.

Following is a description of the several hunting territories:

No. 1. Ni'pu'cin, Jimmie Boson, and his family hunt over a territory lying between Chibougamoo Lake and Obatogamau Lake. The territory bears the name "Poplar River," from one of the streams which flows through it.

No. 2. Ko'tci'tc. Little William, inhabits the district north of Chibougamoo to a range called Rabbit Mountains, to the northeast of Foam River.

No. 3. At'tcə'm, John Stout, inhabits a tract northwest of the preceding, reaching down Chibougamoo River to Opemiska Lake which separates him from one of the hunters of the Waswanipi band. The latter,

according to information obtained through Mr. Cartledge on the hunting territories of that band, would encroach upon that of John Stout according to my own survey.⁵

No. 4. Mi'a'ncām, David Mianshkam, is neighbor to this man on the northwest. No name in particular was given to this district.

No. 5. Wi'ckātcani'c, Chās. Blacksmith, occupies a rather ill-defined tract of country north of the preceding, to Maikaskagi River. His line just reaches to Lake Mistassini. This man derives his name from that of his father plus the diminutive suffix, one of the cases of name-descent from father to son. The territory bears the name "Sturgeon Spawning Place."

No. 6. Pi'tōwa'bānu, Robt. Pitewabanu, occupies a tract known as "Loon Pursuing," reaching from Mistassini past Burnt Woods Lake and thence westward to the head of Victoria River.

No. 7. Wi'ni'pe'go, Albert Trapper, holds a similarly-shaped and extended region north of the preceding, crossing the lower parts of streams flowing into Victoria River. This man's name is interesting since it refers to salt water and is regarded by the Indians as an indication of ancestral residence probably somewhere on James Bay or Hudson Bay.

No. 8. Ni'pu'cin, John Boson. This man holds the chieftainship of the Mistassini band, which is hereditary, and occupies, approximately, a section of the country west of the four preceding men on the course of Victoria River and extending down from Opemiska Lake. He is the father of No. 1, and had with him another son on his own grounds. The name "Grandmother" applied to this territory is said to be derived from an occurrence which tradition locates upon it. An old woman, it is related, was once abandoned by her relatives there, and left to starve, in accordance with a custom which is frequently heard of in the northern regions.

No. 9. Ceka'peo, Mark Shekapeo,

No. 10. Ceka'peo, Mathew Shekapeo, and

No. 11. Ceka'peo, Johnny Shekapeo hunt over a rather extensive district south of the Height of Land and westward to Lake Geikie. They cross the Height of Land to Marten River, which stream, an extremely important one in the annual migration of the Mistassini Indians, has given its name to the whole area. These are three brothers who work together as one crew.

No. 12. Wi'ni'pe'go, Johnny Trapper, has an ill-defined district south of Marten River, between the three preceding and Lake Mistassini, which has no specific name that could be given. He is a son of No. 7 who is living with his father-in-law's family.

No. 13. Ayōstci'me'o, Jacob Huskey, is proprietor of the country on both sides of the outlet of Lake Mistassini into Marten River. Hence the region bears the name "Outlet." The name and tradition in this family point to a former residence at Rupert House. Eskimo ancestry is inferred. Such cases offer an explanation of how Eskimo influence percolates over an Indian

⁵ Information and manuscript from Mr. H. A. Cartledge concerning the hunting territories of the Waswanipi Indians submitted to the Geological Survey of Canada and placed at my disposal by Dr. Sapir.

MISTASSINI FAMILY HUNTING TERRITORIES

<i>No. on Map</i>	<i>Native Name</i>	<i>Translation</i>	<i>English Name</i>	<i>Name of District</i>	<i>Meaning</i>
1	Ni'pu'cin	Embarking in a canoe	Jimmie Bosen	ka'nemi'tucka'u ci'bi'	poplar river
2	Ko'ci'tc	Little son	Little William	nota'pawana'n (south-east shore of Chibugamoo Lake)	rabbit mountains
3	At'tco'm	Little dog	John Stout	kapiet'e'otcawan	foam river
4	Mi'a'neckam	New ground	David Mianshkam	(northeast shore of Chibugamoo Lake)	rush lake
5	Wi'ckatcani'c	Young Whiskey-jack ¹	Chas. Blacksmith	kakotce' pectsiwa'n	sturgeon spawning place
6	Pi'towa'bonu	Double daylight	Robt. Pitevabanu	(?)	loon pursuing
7	Wi'ni' pe'go	Sea man	Albert Trapper	neme'oa'mi'ka'p'	grandmother
8	Ni'pu'cin	Embarking in a canoe	John Bosen (Chief of this Band). Father of No. 1	na'we himo'k'wa'n	marten river
9	Ceka'peo	Going backwards	Mark Shekapeo	(?)	outlet
10	Ceka'peo	Going backwards	Mathew Shekapeo	kopeta'n'	where the current has swept away the alders
11	Ceka'peo	Going backwards	Johnny Shekapeo	ka'moci'tcawa'n	main river (Rupert River)
12	Wi'ni'pe'go	Sea man	Johnny Trapper		East Main River (possibly a corruption of the English name)
13	Ayast'ci'me'o's	Eats raw food ("Eskimo")	Jacob Huskey		
14	Wa'panaki'o's	Man of the east ("Abenaki")	Wapanakio		
15	Ni'bui'c	Standing around	Nibuish (His two sons are with him)		
16	Wi'ckatcani'c	Young Whiskey-jack	Albert Blacksmith	i'smenci'bi'	
17	Wi'ckatcani'c	Young Whiskey-jack	Subdivision of Blacksmith family; there being three families on 17 and 16.		
18	Wi'cena'u	Beaver "castoreum" ²	Chas. Pool	(?)	
19	Mi'a'neckam	New ground	Chas. Mianckam (Brother of No. 4.)	(?)	

20	(None)	Child	Bryan (half breed)	(?)	
21	Wa'ci'c		Johnny Washeesh and his brother-in-law	(?)	
	Matowe'ci'c	One who is slighted in his share of anything	Charlie Matowesheesh (Brother to No. 27)		
22	Nta'wata'	Voyager	Solomon Ntawata	kane'ockwecka'u	birch place
23	Ma'tocic	Little one who cries	Solomon Matosheesh (Brother to Nos. 9 and 24)	(?)	
24	Ceka'peo	Going backwards	Sandy Shekapeo (Brother to No. 9)	(?)	
25	Kwo'medi'c	(baby-talk, no meaning)	Comb Etienne	(?)	
26	Wapasta'n	Marten	Andrew Marten	(?)	
27	Matowe'ci'c	One who is slighted in his share of anything	Joseph Matowecic	(?)	
28	Wi'gan	Good man	Weegun	astuye'kamuk'	canoe lake
29	Pa'ctsigan'a'pic	Little gun man	Joseph Gunner ³	tami'skami'ng	deep lake
30	Nemate'it'e'n	The feeler	Solomon Gunner (Son of No. 29)	(?)	
31	Eta'p'	Old signs	George Etap	mictacini'c te 'tca'	towards Little Mistassini
32	Eta'p'	Old Signs	Jimmie Etap (Brother to No. 31)	kapi'cte'utcawa'n	foam river
33	Hudson Bay post	reserve, intended for	the half-breeds and other	emp'oyees of the post. ⁶	
34	Micta'ci'niu ca'l	Mistassini Charles		kaupatcaga'gan icka'u	tamarack lake

¹ *Wi'cketa'n* is the Canada Jay (*Perisoreus canadensis*), commonly known by the Algonquin cognate *wi'skedjag*. This man's father was *Wi'cketa'n*, "whiskey-jack."

² This family is known to have come from Rupert House, and, as the name indicates, is probably of Eskimo descent.

³ Although this man's name indicates that he may be descended from some of the widely dispersed Abenaki, the informant testified that it was not so understood.

⁴ The scent-glands of the male beaver which are kept by each hunter in a receptacle. This scent is smeared on the traps as a lure to the bait.
⁵ Between 1907 and 1911 this family was greatly reduced by having seven members die of starvation in the hunting grounds. Their remains were found in the spring. Again in the winter of 1921 the head of this family and his oldest son lost their lives.

⁶ In 1912 a dispute arose between the Hudson Bay Company officials and the Pi'tawa'banu family (No. 6), three members of which killed two moose on the western shore of the lake and within the boundaries of this territory. The significance of this dispute is an indication of the aboriginal character of the Indian claims to the land. The company's present holdings are on land segregated from the adjoining territories for the purpose of locating the trading post in their midst.

culture area, evidences of which appear in certain aspects of material life if not in mythology and religious lore.

No. 14. Wa'pana'kio holds one of the most westerly located territories of the Mistassini habitat north of Marten River. This region bears a descriptive name "Where the current has swept away the alders." This man again represents possible ethnic intrusion if we may assume that his name, which is a family one, has been derived from a wandering Abenaki hunter from south of the St. Lawrence. There are many such individuals from the dissipated tribal groups of New England and the province of Quebec who have traveled northward into virgin hunting territory and established their residence under conditions which appeal to the taste of the Algonkian nomad. But in this case the Mistassini informant stated that his ancestor was not definitely known to be an Abenaki, though an eastern origin is apparently indicated.

No. 15. Nibui'c, an old man with two sons in his family, hunts from Lake Nemiskau eastward for about a hundred miles over quite a large territory on both sides of Rupert River. The district is known as "Main River," the Indian name for Rupert River, on account of its importance as a highway, alternating with Marten River in this respect.

No. 16. Wi'ckatcani'c, Albert Blacksmith, holds the region north of the man just mentioned on a series of lakes forming a branch of Main River or East Main River, just which it is difficult to say on the basis of existing charts. The name of this territory is confusing. It appears to be a corruption of the English name East Main. This man is associated with his father-in-law as a hunting partner.

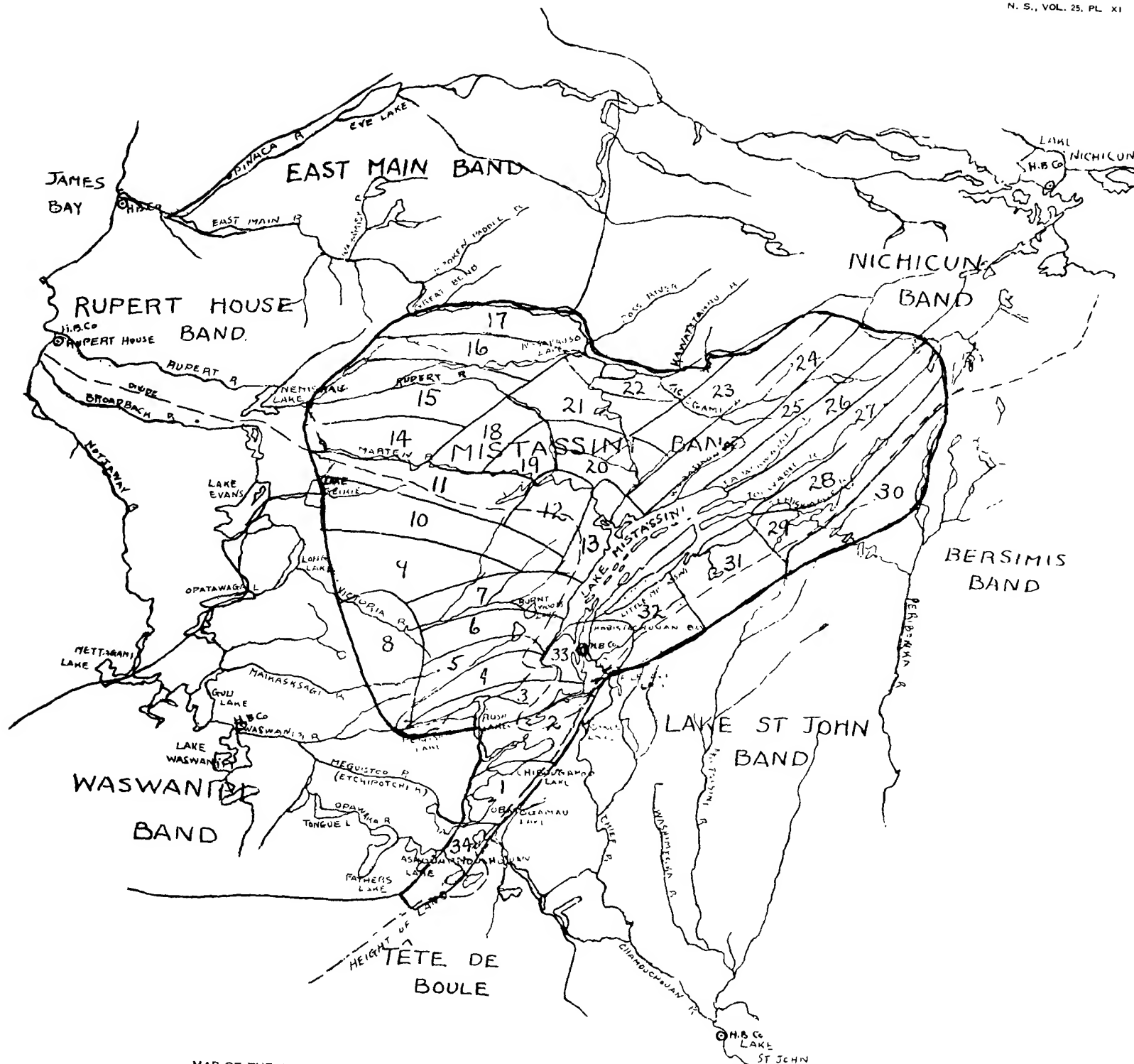
No. 17. Wi'ckatcani'c, other members of the same Blacksmith family as No. 16, who hunt over this territory as well as the other without much regard for hereditary practice. I was informed that three intermarried family groups work both districts. They extend to East Main River from the great Bend of this stream eastward to Nasakauso Lake. North of them are located, according to our testimony, people whose affinity points to residence with the East Main band who descend to trade at the post on James Bay at the mouth of that river.

No. 18. Wi'cna'u, Charles Pool, occupies a region between Marten and Main rivers, about which very little can be said.

No. 19. Mi'a'nckam, Charles Mianshkam (Fig. 68, a), is a brother of No. 4, who has separated from the family territory by paternal descent, through taking up his residence with his father-in-law. No specific name could be found for this tract.

No. 20. Bryan, a half breed, related to one of the employees of the post, assumes proprietorship of the stream flowing into Main River above the outlet of Lake Mistassini. This man on account of his mixed paternity has neither an Indian name nor a name for his territory so far as could be given by the informant.

No. 21. Wa'ci'c, Johnny Washeesh, and his brother-in-law—another case of an individual associating with his wife's family rather than with his paternal group—occupied an ill-defined district north of the preceding. Since the death of Johnny Washeesh the control of this territory has passed to



MAP OF THE REGION OF LAKE MISTASSINI SHOWING THE HUNTING TERRITORIES OF THE MISTASSINI INDIANS
 Compiled and generalized from surveys and charts by A. P. Low and Robert Bell, Geological Survey of Canada. The scale is 50 miles to the inch.

Charley Matowesheesh (Mətowecic), who has married his widow (Fig. 68, *c*) and is brother to No. 27. This man is another who has joined his wife's family group. His wife is sister to Johnny Washeesh. The circumstances are here that, with the death of the proprietor his sister's husband is drawn to the control of the family and its territory.

No. 22. Nta'wəta'. Solomon Ntawata, has one of the remote northerly districts on upper East Main River, bordering on the holdings of the Nichicun band. The district name is "Birch Place." In view of the great distance this man has to cover from his hunting ground to reach the post at Mistassini and then again to pass out to Rupert House, he is well entitled to the name *Voyageur* which he bears, since his annual migration for the purpose of trade may amount to hardly less than a thousand miles, out and back.

No. 23. Ma'tocic, Solomon Matosheesh, is another of the remotely located Mistassini hunters, whose grounds border on the upper waters of East Main River, separating the territories of the Nichicun band from those of the Mistassini. This man is a brother to the three Shekapeos, Nos. 9, 10 and 11 and also to 24 (Sandy Shekapeo). This is a case where a change in family name has resulted from the development of a nickname which is derived from a peculiarity shown by the individual when a little boy. His name, Little-one-who-cries, exists also among the Montagnais at Lake St. John as the possession of a boy who has a very pronounced lachrimose disposition. A new family patronym has thus developed from a nickname.

No. 24. Ceka'peo, Sandy Shekapeo, (Fig. 68, *b*) a brother to the group just mentioned, is another who has abandoned his paternal inheritance for a residence with his wife's family. His territory is a long and narrow one reaching from Lake Mistassini northeast toward Lake Nichicun for something over a hundred miles. Regarding this and the next five districts, I have already remarked in a paragraph in the earlier part of my paper concerning the interchange of privileges between the Mistassini and the Nichicun Indians.

No. 25. Kwo'mədic, Comb Etienne, southeast of the preceding, can be little discussed since the circumstances under which he lives are similar to those of No. 24.

No. 26. Wapəsta'n, Andrew Marten, comes under the same remarks as the preceding. His district follows the drainage of Papaskwasati River.

No. 27. Mətowe'cic, Joseph Matowecic, brother to No. 21, occupies the hereditary paternal holding on Tokwaoio River.

No. 28. Wi'gən, Weegun, hunted south of the preceding, the district being known as "Canoe Lake." He is now dead, but his women continue to operate the grounds, according to the last reports. The expectations are that someone will marry one of his daughters and then assume the proprietorship of the family and lands.

No. 29. Pə'ctsigan a'pic, Joseph Gunner, (Fig. 69, *a*) inhabits the district known as Deep Lake, east of Lake Mistassini. He is another whose lands end on the Nichicun territorial line.

No. 30. Nemate'ite'n, Solomon Gunner, a son of the preceding, again shows the transfer of a family name to an individual nickname. Here with the marriage of his son, an adjoining district has been held and occupied.

I was not able to find out whether this was due to a subdivision of the paternal holdings or to the son, Solomon, having married a woman whose paternal inheritance adjoined that of his father.



FIG. 69.—Mistassini Types: *a*. Joseph Gunner. The medals were given by the Hudson Bay Co. factors to faithful hunters at the three hundredth anniversary celebration of the Company at their various posts in 1921; *b*. A Mistassini woman and child.

No. 31. Eta'p', George Etap, hunts south of Little Mistassini Lake, and a short distance south of the Height of Land. The territory is known as "Towards-Little-Mistassini."

No. 32. Eta 'p', Jimmie Etap, brother to the preceding, has the adjoining tract on Little Mistassini, southwest of him. Evidently this is another case of the subdivision of paternal property among sons. This district is known as "Foam River."

No. 33. The Hudson Bay post's reserve is intended for the use and occupation of the proprietor and employees of the post. I have already remarked elsewhere on some particulars concerning this block of land.

No. 34. Micta'ci'niu ca'l, Mistassini Charles, who is now dead, hunted a narrow district far to the south of the general habitat of the Mistassini group. It was below Obatagomau Lake between districts belonging to the Waswanipi and the Têtes de Boule who belong to St. Maurice River. This man's case was interesting because he had no children. He adopted, by custom, other children who are now grown up and hunting nearer to Lake Mistassini. Since his death this tract is not regularly occupied, but it was expected in 1920 that somebody would soon take it over, although I could not find out just what process would be set in motion for this assignment. The district was evidently somewhat out of the recognized habitat of the Mistassini people as is shown by its irregular projection and by the uncertainty of its tenure. I imagine that if we knew more about whose hands it has passed through we could find that it represents one of those border holdings which do not become definitely assigned to a specified proprietor, but which function in the general support of the nearest band. In this case the territory seems to have fulfilled a charitable function.

In addition to those whose names have been mentioned, and about whom some facts have been given, there are some others belonging to this band who do not subsist regularly and vitally by hunting and trapping. They are mostly of mixed blood. They do not generally own hunting territories because their paternal derivation is not Indian. They may become attached to other hunters and marry into pure Indian families and so acquire rights, or, as often happens, may enter the employment of the post and become interpreters, hunters, guides and men of general service, practically the "*coueurs des bois*" of today.

An instance to be mentioned is that of Tommy Moar (Fig. 68, *d*) who plies between the posts at Mistassini, Rupert House and Lake St. John, summer and winter upon occasion. His father was of German blood, said by him to have been a trader for the company at the Lake Nichicun post, where Tommy was born. His wife is a daughter of Mr. Miller, a former factor at Mistassini. I did not undertake to record circumstances or inquire into these families for reasons obvious to the mind of the ethnologist. Some Mistassini women have become the wives of Montagnais men of the Lake St. John band. They generally retain their own dialect and their children use both that and Montagnais.

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THE RITUAL OF THE CHIEFS OF YUCATAN

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THE political institutions of the natives of Yucatan are so little known that the Chiefs' Ritual on pages 28 to 42 of the "Chilam Balam of Chumayel" may well be considered important material for the study of the history and ethnology of the Mayas. The Chumayel is a native American book written in the Maya language at a time when the people of Yucatan had not completely forgotten the days before the Spanish conquest. I feel justified in saying that the writers of the material contained in this book still had access to the old hieroglyphic manuscripts and were still able to read them, for the Chumayel itself is an eighteenth century compilation of much older writings. Father Avendaño, who visited the heathen Itzas at Tayasal during the last decade of the seventeenth century, expressly states that he had learned to read the Maya prophecies written in hieroglyphic characters before he made his journey, in order to demonstrate to these people that according to their own books the time had now arrived for them to accept the Christian faith. Surely this indicates that a knowledge of hieroglyphic writing still existed in northern Yucatan up to the end of the seventeenth century at least.

A remarkable state of affairs existed in Yucatan at the time of the Spanish conquest. We see a system under which the government of the various tribes was in the hands of a hereditary ruling class, which possessed both a religion and a tradition in which the general run of the population did not participate. Landa (1881, p. 302) describes the festival of the chiefs who assembled each year at Mani in the month of Xul and held a great festival in honor of Kukulcan. Some of these chiefs called themselves the Suiua people; certainly the name Maya was not held in the highest esteem. Diego Sarmiento de Figueroa says in his report on the town of Popola, "The language spoken in

this town is called the Achmaya (Ah Maya) language, which means people of low and servile minds and of little account. They were given this name by the Indians of the Province of Chikinchel."¹ This statement is confirmed by the "Relación de Valladolid."² Indeed one of the names for the Maya language that has come down to the present time is *maceual than*, which means the speech of the laboring class, though it now seems to have lost its derogatory meaning. Landa tells us, "When the lord died, although his eldest son succeeded him, the other sons were no less loved and cherished and indeed regarded as lords."³ He also says, "The lords appointed governors and, in cases acceptable to themselves, confirmed sons in the offices of their fathers." Nakuk Pech, a native chief who had grown to maturity before the Spanish conquest, also confirms this.⁴

To explain this state of affairs we must go back to a condition which had terminated before the Spaniards came. At the time of the conquest, Yucatan was divided into a number of independent states, but as late as the first half of the fifteenth century, a large part of the country was still under a central government located at Mayapan. We learn from the account of the visit of Fray Alonso Ponce to Yucatan in 1586⁵ that at Mayapan,

as though it were a court, resided all the caciques and lords of the province of Maya, and the people brought their tribute to them there. Among these were two principal ones whose superiority and lordship the others recognized, and for whom they had the highest respect. One of these was named Cocom and the other, Xiu. The old Indians say that the Xiu, aided by the other chiefs, killed the Cocom, who was more of a lord and higher in rank than he was, for he informed them or made them believe that the Cocom secretly sold native Indians as slaves to foreign merchants. At the death of the Cocom, the city of Mayapan was deserted by all. The Xiu, they say, remained in Mani with his family and followers. The descendants of the Cocom and his faction went to Zotuta. . . . The other caciques did the same and returned to their own lands, leaving the city of Mayapan entirely deserted.

¹ Doc. inéd., vol. 13, p. 41.

² Doc. inéd., vol. 13, p. 23.

³ Landa, 1900, vol. 11, p. 315.

⁴ Brinton, 1882, p. 216.

⁵ Ponce, 1872, vol. 58, pp. 470-471.

To explain how our ritual came to be called "the Suiua ritual," Landa says that the Xius came from the south and

that these tribes wandered in the forests of Yucatan for forty years with only rain water to use, but at the end of that time they arrived at the mountains opposite Mayapan, ten leagues away, and there they began to occupy the land and construct good buildings in many places. The people of Mayapan established friendly relations with them and were glad to see them cultivate the land like the natives of the country. In this way the Tutuxiu people became subject to the laws of Mayapan. They intermarried and the Lord Xiu of the Tutuxius became highly esteemed by everybody.⁶

Like the Itzas, the Xius believed themselves to have originated in a place called Suiua⁷ which Brinton⁸ and Seler⁹ have shown to be a Mexican name. Torquemada (Book 3, Chap. 7) quotes a legend of the Nahua peoples of the highlands of Mexico, telling how people from that region went to Yucatan under the leadership of Quetzalcoatl, which is the Aztec equivalent of the Maya Kukulcan. The report of Mamá by Juan de Aguilar states,¹⁰ "They were subject to a lord named Tutul Xiu, a Mexican name. They say he was a foreigner and had come from the west." The Mexican ball court and other archaeological remains at Uxmal seem to confirm this story.

There were other Mexican groups besides the Xius which came into Yucatan and adopted the Maya language. The best known case is that of the so-called Mexican mercenaries who were called in to support the Cocoms at Mayapan at a fairly late date,¹¹ but it is difficult to believe that they were responsible for much of the extensive intrusive culture seen in the language, architecture and religion of Yucatan, for Landa tells us,¹²

As the Mexicans were foreigners and had aided Cocom only upon the invitation of the sovereign of the country, the lords who sacked Mayapan sought no revenge upon them. They allowed them the choice of going away or

⁶ Landa, 1900, vol. 11, pp. 286-287.

⁷ Brinton, 1882, p. 100.

⁸ Ibid., p. 110.

⁹ Seler, 1902-1908, vol. 2, pp. 574-575.

¹⁰ Doc. inéd., vol. 11, p. 161.

¹¹ Landa, 1900, pp. 288-290.

¹² Landa, 1900, p. 290.

settling in the country, but did not permit them to marry the women of the country. They preferred to remain and settled in the province of Canul where they remained until the second Spanish war.

They were no longer speaking a Nahua language at the time of the Spanish conquest but believed themselves to have come from Suiua, according to the "Crónica de Calkini."¹³

According to the Chumayel ritual, at the beginning of each katun, or period of approximately twenty years, the chiefs holding office who did not know the ritual were weeded out by means of a rigorous examination. There was a different ritual for each of the thirteen katuns, for most of the prophecies state that the ritual of the katun was changed.¹⁴

The Chumayel version shows the effect of a long Spanish occupation of the country. The Spanish governor was evidently regarded as the successor of the head-chief of Mayapan. His title of Mariscal places the dedication in the eighteenth century. Horses and European fowls are mentioned, it is true, but on the whole the text is fairly free from European ideas. A literal translation of the ritual follows.

TRANSLATION

(*Chumayel*, p. 28).

The ritual and understanding for our Lord, Sr. Gobernador, Mariscal. This where he settles, where the taxes are apportioned, in the east, at Merida. This where his walls and site are. Then will come the end of his period of office also. There comes the command of the head-chief, mighty is his word. Then he shall arrive. Red is his garment also.

On this day, according to the Suiua ritual, this indeed is the word. This is the desire of the head-chief of the town. At that time shall come the fulfilment of the ritual of Katun 3 Ahau. Then shall be set down the change of the katun, Katun 1 Ahau, as (written) below.

This is now the katun, Katun 3 Ahau. It has come on this day. Ended is its rule and reign. It is over. It has ceased to be. It changes.

This is Katun 1 Ahau, set within the house of Katun 3 Ahau, its guest there, while it is given its complete power by Katun 3 Ahau. Shameful indeed are things in the settlements.

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The seeking of the knowledge which comes within the katun which ends on this day. Now comes the time of the seeking of the knowledge of the

¹³ Crónica de Calkini, p. 36.

¹⁴ Códice Tizimin

chiefs of the towns, whether they know of the coming of the men and rulers, whether they have taken into account the coming of the chiefs, of the head-chiefs, whether they are of the lineage of rulers, whether they are of the lineage, that they may verify it.

This is the first ritual which will be sought of them. They shall seek his food. "Bring the sun," is the command of the head-chief to them. Thus shall it be said to the chiefs, "Bring the sun, Son, that you may bear in your hands my plate, the planted lance, the lofty cross, in the middle of his heart. Then the green tiger is set upon the sun that it may drink its blood." Of Suiua is the knowledge. This is the sun which is to be sought of them. It is a very large fried egg. This is the lance and lofty cross planted in his heart. It is what he says. It is his blessed word. This is the green tiger set upon it to drink its blood; it is a green pepper. That is the tiger. Suiua ritual.

This is the second ritual which will be sought of them. Then let them go and get the brains (moisture) of the sky, that the head-chief may see how much there is. "It is my will to see it. Let me see it." This is what shall be said to them. This is what the brains (moisture) of the sky are. It is copal gum. Suiua.

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This is the third ritual which is to be sought of them. Let them bind a large house. Six beams comprise its size. One is its entrance. This is what the large house is; it is an enormous palm-hat. They shall be told that the ruler shall mount a large white horse. Very white is his mantle and his cape, and he holds a white rattle stick in his hand while he manipulates his horse. There is coagulated blood upon the flower of his rattle, which has been taken. This is what the white horse is; it is a stirrup of hennequen cord. This is what the white rattle is which is mentioned. It is a very white cape, it is a flower, a very white enramada. This is what the coagulated blood is, of the flower of the rattle, which is to be sought of them. It is gold. It is in the middle, because it is blood which comes from the veins of the fatherless and motherless orphan.

This is the fourth ritual which is to be sought of them. Let them go to the tribal house and they shall be told as follows: "You shall come, your visible selves, into the middle of the sun. You shall become infants again. You shall be born. You shall arrive where your spleen is in your back. This is your spleen, compressed in the soul of our holy mistress. Then you shall arrive with it." This is the second childhood spoken of to them, which is in the midst of the sun; let him go where his shadow is cast. Then, as he has been told, he shall move away. Then he arrives where the head-chief is. This is the spleen, which is demanded of him; it is his wife. This is the soul of our holy mistress; it is an enormous candle, a very heavy candle. Suiua ritual.

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This is the fifth ritual which is to be sought of them. It shall be told to them. Then let him go and get the heart of god supreme in heaven. It is this: "You shall bring me thirteen folds of coverings, in which is wrapped its exterior, and a white fabric." This is what the heart of god supreme is,

which is spoken of to them; it is a yellow bead. This is what the covering of thirteen folds is, which is spoken of to them; it is an enormous tortilla. There are thirteen layers of small beans in it. This is that the very white coarse fabric is; it is a mantle. This is what is to be sought of them. Suiua knowledge.

This is the sixth ritual which is to be sought of them. They are to go and get the branch of the pochote tree, and a three-strand cord, and a living liana. This is what he will relish. "My fragrant food, I desire to eat." But he may not gnaw the trunk of the pochote tree, as they are told. This is what the trunk of the pochote tree is; it is a one-eyed creature.¹⁵ This is what the three strand cord is; it is the tail of an iguana. This is the living liana; it is the entrails of a pig. This is what the trunk of the pochote tree is; it is the base of the tail of the one-eyed creature. Suiua ritual.

This is the seventh ritual which is to be sought of them. It shall be said to them, "Go get for me the turtle from the bottom of the cenote, two very white and two very yellow. I wish to eat." This is the turtle from the bottom of the cenote, which is to be sought of them. It is a white g'cama and two very yellow ones. The understanding for the chiefs when they are brought before the first head-chief.

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These are the rituals.¹⁵ If they are not understood by the chiefs of the towns, sad is their star adorning the night. Frightful is its house. Sad is the (misfortune called) *okom bulcum*¹⁷ in the center of the town among the men of rank. Those who die are those who do not understand. Those who live are those who understand. This shall be set over the chiefs of the towns. This is the mutual test copied in order that there may be known the severity with which the reign is to end. Their hands are bound before them and (they wear) a collar of wood. Tightly drawn is the cord. They are brought before the ruler, the first head-chief. This is the end of the chiefs. This shall be set over the unrestrained ones of the day and of the katun. They shall be heard. Then shall end the things of the chiefs of the towns. This shall come to pass on that day. The ritual of the katun shall be ended, and then shall end Katun 3 Ahau. The chiefs of the towns shall be seized because they do not understand.

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(A crude line drawing of two men. One, who is clothed, leads the other, who wears a wooden yoke, is bound and is naked.)

Thus occurs the seizing of the chiefs of the town. (This is) a record in order that they may give to eat to the first head-chief, when he asks them for

¹⁵ The word in the text is *chop*, for which I find no meaning. *Chopp* means "one-eyed."

¹⁶ The word translated as ritual is *than*. Its most usual meaning is "speech" or "language."

¹⁷ This phrase, *okom bulcum*, occurs frequently in the prophecies. No meaning has been found for it yet, but it usually occurs in a list of public misfortunes. Unlike the present text, it is usually mentioned as occurring out on the road and at the cross-ways where travellers rested and camped at night. *Okom* means "sad."

food. They shall be hung by the neck, their tongues cut out, their eyes torn out, at that time. This shall be their end. These are the ones of lineage. Then shall they come forth before their lord on their knees in order that it may be learned whether they have judgment and discretion. Then is their mat and throne also delivered to them. This is how they are tested. The copy shall be seen. They shall be seen, the lineage of the head-chief in the land. They shall live on that day. They shall receive their first rod of office (*vara*) also. Thus shall be established the lineage of Maya men here in the district of Yucatan for a second time. God is the guide. It shall be accomplished here on earth. This is the true ruler; he shall come to seek us. This is our ruler; this is our holy one. Precious stones, yellow beads. He also seeks wine, *balché*. He who has none shall be killed. He who obeys, godly (*Diosil*) is his action according to the ritual. But God will not desire the occurrence of all the things which have been written.

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(Picture of a bearded Spanish dignitary wearing a hat and cloak and bearing a wand of office.)

So also, these are the men of rank, the lineage of the chiefs, who know. Thus they come, men and rulers. Well regarded is their prudence and their discretion, commanders and subjects. Then shall be delivered happily their mats to them and their thrones to them by our first head-chief. This is their mat and their throne. (On the other hand) roughly handled, buried in the ground is the face, stamped into the ground as he is dragged is the unrestrained one of the day, the unrestrained one of the *katun*, the mad one, the crazy one, the son of shame, the prophet of the mat, the prophet of the throne, the scoundrel of the reign, the scoundrel of the *katun*, who moved abroad during *Katun 3 Ahau*. Burst open is the fullness of the hearts of the lineage of the men of rank, the ruling men, when they are addressed, when they go to take the chiefs of the towns. Then let them go to take them. "Son, go bring the flower of the night to me here." This shall be said. Then let them go on their knees before the head-chief who desires it of them.

"Father, here is the flower of the night which you ask of me. I also bring the shame of the night. I have it with me." Then he says, "And so, son, have you it with you?"

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"Have you the green weak thing with you and the great *copo tree*?"

"Father, they are with me. I bring them with me."

"So, Son, are they with you? Go call your companions to me. They (should be) one old man with nine sons, and one old woman with nine offspring." "Father," he says when he shall reply, "They come with me, they are with me. Having been guided, they came with me when I came to see you."

"So, son, are they with you? Go gather for me the stones of the plain, and with them, come you." They are gathered at his breast as he comes. "Are you a head-chief? Are you of the lineage of the ruler here in the land?" *Suiua* ritual.

Now this is what the flower of the night is, which is sought of him: it is the star in the sky. This is the shame of the night: it is the moon. This is

the green weak thing and the great copo tree: it is the town official; "that which falls to the ground" is it called. This is the old man who is sought of him and who has nine sons; it is his great toe. This is the old woman, sought of him. It is the thumb of his hand. These are the stones of the plain which were to be sought of him, and which are gathered up by his son; it is a quail.

"And so, son, where is your green son-in-law, spoken of to you? Look not down upon his face." "Is he not with me, father?"

And so, son, go bring me the entrail of the sky here; when you come from the east, you shall bring it upon your back." "So be it, father," he says. Now this is what his green son-in-law is, which he has with him when he comes; it is the rind of a squash. This is the entrail of the sky which is sought of him. It is moulded copal gum. In thirteen layers is it moulded. This is the manner in which he is to come with something upon his back. There should be his shadow at his back. It should be early in the afternoon.

"Son, a head-chief are you, a ruler also? Go get me your green beads with which you pray."

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These are the green beads sought of him. They are the yellow beads (called *kan*). Then he shall be asked how many days he has prayed. "Father," he says, "for one day have I prayed and for thirteen days have I prayed." "On what day shall your prayer arise?" "Father, on the ninth day and on the thirteenth day. *Bolon-ti-ku* and *Oxlahun-ti-ku*, this is how I count my beads."

"Son, go get me your loin-cloth, . . . its odor here, and its extended odor, the odor of my loin-cloth, the odor of my mantle, the odor of my censer, the super-odor of the center of heaven, of the center of the clouds, and that with which my mouth is stuffed, which is in the white incised (container), if you are a head-chief." "Father, I will bring it," he says. This is the odor of his loin-cloth for which he asks; this is the super-odor of the heavens: it is burning copal, it burns. This is that with which his mouth is stuffed, which he asks for, it is ground cacao.

"So, son, go bring me the green blood of my daughter, and her head, and her entrails, and her thighs, and her arm, and the leaf with which you cover an unused jar, and the green chair of my daughter. Show it to me. It is my charge to you that it be set before me, that it may be broken over me."

"So be it father." He brings him the left ear of a wild bee from the forest clearing. Then let him go. This is the green blood of his daughter which he wishes. It is Maya wine. This the entrail of

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his daughter; it is an empty bee-hive. This is the head of his daughter; it is an unused jar into which honey is to be poured. This is the green chair of his daughter; it is the sting of a bee. This is the left wing of the wild bee; it is the moisture of the wine. This is the bone of his daughter; it is the bark of the balché tree. This is the thigh of which he speaks; it is the wood of the balché tree. This is the arm of his daughter; it is the branch of the balché tree. This is what he means when he says "over him." Drunken is his speech. Then let him go and give it to him. Let him seat himself quietly. Let him await his word. Let him salute him respectfully when he shall come.

"Father, here is your daughter whom you gave me to guard, of whom you speak, oh father, oh ruler." That is what his son says to him.

"Oh Son, my fellow head-chief, my fellow ruler! You have remembered Baca. You know Baca," he says. "This, then, is the blood of my daughter which I demanded of you." Thirteen times flows the blood of his daughter, the *tantun*¹⁸ over his daughter, when it lies in the hall, if perchance it is over her, while he sees her bowed down, while he speaks. "Oh son!" he says over him, "a head-chief are you. Oh son! a ruler are you also. Oh my fellow head-chief! I shall now deliver (to you) your mat and your throne and your chieftainship, my son, for your rule, for your reign also, you who are my son." This is the end of the speech to the chiefs of the town. Then they shall depart with the head-chief,

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there in the head of the land. Then let them go to the tribal house, and then when they are at the tribal house, while they give food to the head-chief, and while he asks food of them also, thus shall it be recited.

"Son, bring me four red mottled things which are at the mouth of the cave, for me to set up above my first mouth-filler. It may be a red flower, which I call the crest over my mouth-filler. Then let it come before me." "So be it, father." This is what he wants; it is sweetening. This is the crest of which he speaks; it is chocolate. This is what his first mouth-filler is; it is cacao which has been ground. Suiua.

"Son, bring me the bird of the night and the limp thing of the night, and bring with it the brains (or moisture) of the sky. I greatly desire to see them here." "So be it father." This is what he wants; it is the implement for burning copal. This the limp thing of the night which he desires. This is the brain of the sky; it is copal. Suiua ritual.

"Son, bring me the bones of your father, whom you buried three years ago. Great is my desire to see them." "So be it, father." This is what he wants; it is yucca, baked under ground. Then let him go and give it to the head-chief.

"Son, bring me one old man. The buttons are not buttoned on the hollow thing about him. Important is his name." "So be it, father." This is what he wants; it is an armadillo, the scaly one.

"Son, bring me the layers of the heavens. My desire is to eat them." "So be it father."

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This is what he wants; it is stirred atole. It is to be atole. Suiua ritual to be sought by all.

"Son, bring me the base of the maguey, the body of the maguey, without its branches. Do not remove its shoots (or thorns); and bring with it three strands of raveled cord." "So be it, father." This is what he wants; it is the head of a pig, baked underground. Then let him go and give it to him. This is the shoot of which he speaks; it is its tongue, because it is the tongue which is the shoot. Suiua.

¹⁸ Even Lizana avoids the translation of this word in his translation of the prophecies.

"Son, bring me that which curls up at night, that I may eat it." "So be it, father." This is what he wants: European chickens. Suiua.

"Son, tell the green weak thing, that which falls limply to the ground, as it is called, that he shall bring me one large basket of thrushes, which he has caught under the great copo tree, which had gathered under the shade of the copo tree." "So be it, father." This is what he wants: black beans, which are in the house of the town official. He is the green weak thing, and that which falls limply to the ground, of which he speaks. Suiua.

"Son, go catch the tiger of the cave that he may give savor to my food. I wish to eat the tiger." "So be it, father." This is what the tiger is which he desires; it is a spotted agouti. Suiua ritual.

"Son, bring me seven knees of orphans. My desire is to eat them at the time when they are to be eaten." "So be it, father." This is what he wants; it is a skeleton crammed into a grave (doubled up).

"Son, bring me the green gallants here. Let them come to dance, that I may look on. Bring with them the drum and rattle and fan, and the drum-stick. These are good for me." "So be it, father." This is what he wants: a turkey. This is its drum: its crop. This is its rattle: its head. This is its fan: its tail. This is its drum-stick: its leg. Suiua ritual.

"Son, bring me the whimsical desire of the district. My desire
(page 40)

is to eat it." "So be it, father." This is what he wants: honey. Suiua.

"Son, bring me the stone of the burned field, which burns, and with it the liquid that spreads that I may extinguish it. Here, then, it cracks before me." This is what he wants: the cover of an underground oven. This is the spreading liquid with which to extinguish it; it is honey. Suiua ritual.

"Son, bring me the handle to your firely. It is to the north; it is to the west; its fragrance passes. Bring with it the rolling tongue of the tiger." "So be it, father." This is what he wants: a cigar. This is the rolling tongue of the tiger, which he desires; it is fire.

"Son, bring me your daughter that I may see her. She is very pale of countenance, very beautiful. Very white is her mantilla and her sash. Great is my desire for her." "So be it, father." This is what he desires: a white gourd, and a cord and atole (in it). Suiua.

"Son, bring me the thing called *sabel*. Fresh is its odor." "So be it, father." What he wishes is a melon.

"Son, bring me the green curved neck, very green the back of it. I wish to eat it." "So be it, father." What he wants is the neck of a turkey. Suiua.

"Son, bring me a woman. Very white and round is the calf of her leg. Here will I tuck back the skirt from her calf." "So be it, father." What he wants is a *gícama*. By tucking up her skirt, he means turning back its skin.

"Son, bring me a woman. Very beautiful, very white is her face. Greatly do I desire her. Here will I cast down her skirt and her *guaypil* before me." "So be it, father." What he wants is a turkey hen to eat. This is what casting down her skirt

(page 41)

and *guaypil* is; it is plucking its feathers and roasting it for eating. Suiua.

"Son, bring me one farmer, an old man, here. I desire to see his face."

"So be it, father." What he wants is the body of whatever he may eat. (This is) the riddle.

"Son, bring me a woman of the fields, an old woman. Dark is her complexion." "So be it, father." What he wants is a green squash. Suiua ritual. The time shall come.

This is the time when he trampled it down, our lord, the first governor. Finally he arrives here in the land of Yucalpeten; he calls the chiefs. Then shall come the chiefs. They are called by our lord, the head-chief. "Are ye the chiefs?" "We are, oh lord." This is the ritual spoken to them.

"Sons, are you head-chiefs here in the land?" This is what shall be said to them. "Go get the winged tiger and come and give it to me to eat. Freely give his collar; freely give his crest and then come and give it to me to eat. Go immediately now, and come soon. Sons, great is my desire to eat them. You are (my) sons; you are head-chiefs." Those who are ignorant, miserable shall they be at heart and in countenance. What they have not been told, that (must) they know. Cheerful are (the others) when they go to get the winged tiger. Then let them come back with it. "Is it you, son?" "It is I, father." "Are your companions here, son?" "Father, they are in the forest seeking the tiger." There (really) is no tiger according to the ritual. (*page 42*)

Then let them bring it before him. This is what he wants; this is what the tiger is, it is the chief's horse, which he desires to eat. It is a tame horse. This is the collar; it is the little bells. This is its crest; it is a red thread freely given, and its saddle and its bridle. Suiua ritual.

In addition to the books used in the preparation of this translation, the writer wishes to acknowledge the helpful suggestions of Professor A. M. Tozzer and Sr. Juan Martinez. The University of Pennsylvania publication of the Book of Chilam Balam of Chumayel is so generally accessible, that it does not seem necessary to publish the Maya text of the ritual in this article.

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VANCOUVER B. C.

NOTES ON SAN FELIPE AND SANTO DOMINGO

By ELSIE CLEWS PARSONS

THE following notes were made during a brief stay at San Felipe and during an interview of several hours at Lamy with a Santo Domingo man who succeeded in eluding his pottery selling colleagues between trains and joining me in a room off the station's patio. In these Eastern pueblos today there appear to be but two methods of approach to informants: paying court for weeks, perhaps months, to the townspeople in general—"Come back again, *the people will get used to you*," I was advised in San Felipe; or chance interviews, preferably away from the pueblo, with persons who are more or less taken by surprise and have not time to begin to entertain the fear of consequences. In San Felipe the two best informants of the town were "progressives" and therefore, they said, already under suspicion. One of them was willing to work at language, however, and the other to put me up in his commodious house until it was learned that I had been "talking" to a girl neighbor whose father was a conservative, besides a mean man, and would betray them. Thereupon my landlord so intimidated the other man, his "cousin," that to secure him for language work with Dr. Boas I had to leave town¹ and plan for interviews at Algodones, the Mexican settlement three or four miles away.

¹ And a most regrettable room hung with tanned buckskins from Navaho and Supai, with elaborately beaded buckskin trousers and shaps and saddle bag from Ute and Sioux, with a dance foxskin and a scarlet trimmed cotton vestment (my host was church interpreter), with many necklaces of turquoise and white shell and olivella, a bag of unspun cotton and what was probably a bag of prayer pollen. My host may have found his Indian religion "too hard," as he said; nevertheless, in some particulars at least, he was a conformist, and, being a man of property, "nicely fixed up" he put it, he did not want "to be interfered with."

SAN FELIPE²

CLANS

There are twelve matrilineal exogamous clans as follows:

<i>yaka</i>	Corn	<i>pe'lak</i> (Sp., <i>sapo</i>)	Toad
<i>huuk'a</i>	Dove	<i>yahts'a</i> (<i>yashdja</i>)	White Shell
<i>ěstsira</i>	Crow	<i>hakani</i>	Fire
<i>sii</i>	Ant	<i>dyami</i>	Eagle
<i>tsits</i>	Water	<i>tsina</i>	Turkey
<i>shutsuna</i> (<i>shurtsuna</i>)	Coyote	<i>hami</i>	Tobacco

Antelope, *kūrts*, is an extinct clan.³ Corn and Dove are the two largest clans. Only one case of endogamy was known—in the Eagle clan.

CLAN ELDERS

There is a term for clan elder or head, *na'waiya* (Laguna, *nawai'*). The Ant clan head would be *si hanoch na'waiya* or *si na'waiya*. Clan disputes would be referred to the *na'waiya*. I was unable to ascertain what ritualistic functions, if any, were performed by the *na'waiya*.

ESTUFAS (*CHITY'A*)

There are two—*tani*, pumpkin, and *shuimi*, turquoise.⁴ They are very large round buildings, above ground, one towards the west side of town, the other towards the east. My acquaintances referred to them in English as "round houses." "We are *shuimi*," said a girl informant, "because my father belongs to

² Called Tamoya at Laguna and Zuñi, and, according to Bandelier, by its own townsmen, Katishtya. (Final Report, pt II, 186, n. 3, Papers of the Archaeological Institute of America, Cambridge, 1892.)

³ Hodge ("Pueblo Indian Clans," pl. VII, American Anthropologist IX, 1896) lists as extinct clans: Arrow, Chaparral Cock, Deer, Earth, Moon, Mountain Lion, Salt, Turquoise, and Crow, a clan which, according to my list, survives. As near extinction, Hodge cites: Flower, Humming-bird, Swallow. Omitting these clans his list of clans reads: Ant, Antelope, Bear, Calabash, Coral [probably White Shell], Corn, Coyote, Dove, Duck, Eagle, Fire, Frog or Toad, Oak, Parrot, Sun, Tobacco, Turkey, Water—eighteen clans to my twelve.

⁴ As at Cochiti, Sia, and Sant' Ana, Jemez also.

shuimi," and she thought her father was Turquoise because his father was Turquoise. This is the practice at Cochiti and Jemez, probably elsewhere.

CHAIANI

The *chity'a* are not used by the *chaiani* who have their own ceremonial rooms. There are the following *chaiani*:

Name	Number
<i>shkuyu</i> (Giant)	12
<i>hishtean</i> (Flint)	6 men, 3 women
<i>shui</i> (Snake)	5 men, 2 women
<i>shika</i>	Unknown, some women
<i>kūshali</i>	5, some women
<i>kwirena</i>	?

There is some specialization in curing:

Rheumatism,	<i>shkuyu</i>
Fever	<i>shkuyu</i>
Tuberculosis	<i>shkuyu</i> or <i>shika</i>
Whooping Cough	<i>kwirena</i>

For sores from ants a *sii* or Ant *chaiani* is summoned from Santo Domingo.⁵

The *kūshali* (*kūshari*) are of course "to make fun." As elsewhere they wear cornhusks and are painted black around the eyes.

There are winter and summer solstice ceremonials—*kuats-chaianyashdyia* and *kuashiwānashdyia*—at which certain *chaiani* go into a retreat of four days, each set into its own room; first the Giant, then the *kwirena*, then the *kūshari*. After they come out there is a *shiwanna* dance, presumably a masked dance. There is no set of *shiwanna chaiani*,⁶ but as I sat talking one day to my girl informant she pointed out an old woman passing the house as a *shiwanna chaiani*; as a child she had been "caught near their house." Children are not allowed near the *chaiani* house when the *chaiani* are in retreat, and, if children trespass, evidently they are initiated. Dumarest states that in every town there are two

⁵ At Laguna I likewise heard of this *sii chaiani* of Santo Domingo. See p. 492.

⁶ Cf. Parsons, E. C.: "Notes on Ceremonialism at Laguna," p. 113, n. 6, *Anthropological Papers*, vol. XIX, pt. IV, American Museum of Natural History, 1920.

women *chaiani* attached to the Giant and the *shikami chaiani*.⁷ I infer that the old woman pointed out to me was one of these.

GOVERNMENT

The *tiamuni hocheni* or *kasike* is a Giant *chaiani*, and his two assistants are Flint and *kwirena chaiani*. The fields of the *kasike* are worked for him and there is hunting for him. "We must have game about the village to hunt for the *kasike*. He works hard for everybody, for White people too. The Mexicans tell us we lose time hunting for the *kasike*; but it is *very important* to hunt for him." . . . This from a man who claimed that he was wholly Catholic, that the Indian religion was "too hard" for him. Women go out on the hunt, and the woman first to reach the quarry receives it. . . . If a household needs supplies, it will apply to the *kasike* for help.

The lay officers are chosen by the *kasike* or, as one informant put it, by the three *kasikes*. The head *kasike* appoints the governor, *tapup*, and his *tenyiente* (*g'akumpanyero*, his companion), the second *kasike*, the two war captains (*capitan*), the third, the two fiskals (*piskal*). On January first the *kasikes* give the canes (*yapi*⁶) to the incoming officers. The canes are taken to the church (*gumbent*⁶) on January 6, *dia de reis*, for the priest (*totach*⁶) to sprinkle them.⁸

There are four *tsatio hocheni*, chiefs of the outside, or, as they are also called in other Keresan towns, "war captains," and there are *u'pi* (war priests or scalp takers), according to a girl informant. According to a middle-aged man, his own father, no longer living, was the last *u'pi*. The war dance, *ahina*,⁹ is danced "after Christmas." The *tsatio hocheni* guard at curing ceremonials (*gaiyawigashanyi*) against the witches (*g'anadye*). Throwing a pinch of ashes out at the window against witches was a familiar

⁷ Dumarest, Noël.: "Notes on Cochiti, New Mexico," *Memoirs of the American Anthropological Association*, vol. vi, no. 3, p. 189, 1919.

⁸ Cf. Dumarest, p. 203.

⁹ Cf. "Notes on Ceremonialism at Laguna," p. 123.

practice, also putting an arrow point under the tongue, this against the devil (*maiyaní*).¹⁰

DANCES

The *chakwena*¹¹ is danced—my girl informant recalled a performance “after Christmas”—but the names of other masked dances I failed to learn. The greatest secrecy is observed. During performances wagons are piled across the bridge to shut out visitors, and it is said that on one occasion when the government farmer, a Mexican, had returned to town from a farm on the side of the river of the town proper, the plaza, *k’akati*, or dance side (there is a large settlement on the other side of the river too), he was locked up. (If he did bring suit for the arrest, as the story goes, the court scene must have been not without humor.) . . . Winter dances inside the estufa are called *kaiiaheenatsdya*.¹²

CEREMONIAL TERMS

The following terms and the ceremonial complexes or usages they imply I found familiar: *ko’pis’taiya*, all the supernaturals; *shiwana*, storm clouds or rain supernaturals; *shipapu*, the place of emergence whence the people brought with them their ceremonies; *wenimatsi*, where after four days the dead go (the dead are buried in the churchyard which is quite level and without a cross); *hadjamuni*, prayer-sticks (for the dead, they are perhaps black and green); *naiya* (mother) *iariku* (Laguna, *iyatikǎ*—*iariku* is the Sia and Cochiti form), the earth supernatural and her corn ear representative; *yapaishin*, altar (“our songs are for crops and rain”); *wawa*, medicine; *masewi* and *uyuyuyewi*, the war gods; *montezuma* (considered Mexican); *poshaiyanki*, a mythological personage associated at Zuñi with the curing societies; *kokwe’mu*,

¹⁰ At Laguna this term was used for the ghost who appears because you do not feed him. You then would take the food he likes to the churchyard.

¹¹ Cf. Dumarest, p. 203, “Notes on Laguna Ceremonialism,” 97-8; Parsons, E. C.: “Laguna Genealogies,” 223-4, Anthropological Papers, vol. XIX, pt. V, American Museum of Natural History, 1923; Parsons, E. C.: “Winter and Summer Dance Series in Zuñi in 1918,” pp. 171, 187, Univ. California Pubs. in Amer. Archaeology and Ethnology, vol. XVII, no. 3, 1922.

¹² Cf. Dumarest, p. 184.

man-woman (of which there is none now among the people); *días de los muertos*, All Souls' Day, when food is taken to the church and returned to poor people by the priest;¹³ *premisio*, tithes to the priest; *uwechatike*, priest's stole which is put around the shoulders of the kneeling bridal couple;¹⁴ *g'anaishd^e* and *g'anaiya*, his or her father or mother, i. e., *padriño* and *madrina di casamento*, marriage sponsors.¹⁵

HOUSE OWNING

The marriage is performed "any time when the father (priest) comes." The couple may live on with the bride's parents or they may move to a house presented to them by the bride's parents or, especially in the case of a widower, a house owned by the bridegroom. Well-to-do people are especially apt to give their daughter a house when she marries. The two families I saw most of had begun housekeeping on this basis. Then, after some years, the men wished to build houses of their own and they moved from the heart of the town to the outskirts. "I got ashamed and wanted a house of my own name," observed one of these men, "I am a man. I should have my own house."

CONFINEMENT

The lying-in is for four days—with hot cedar brew to drink. The paternal grandmother comes morning and night to wash the baby and on the fourth morning to carry out the baby and give it a name.¹⁶ The mother continues to drink the brew, but now not hot, from two to four months.¹⁷

¹³ For another version see Dumarest, p. 171.

¹⁴ Dumarest, p. 148 n. 1; Parsons, E. C.: "Further Notes on Isleta," *American Anthropologist*, n. s., 23 (1921), 167.

¹⁵ "Laguna Genealogies," p. 164; "Further Notes on Isleta," 167.

¹⁶ Parsons, E. C.: "Notes on Acoma and Laguna," *American Anthropologist*, n. s., 20 (1918), 174; Parsons, E. C.: "Mothers and Children at Laguna," *New Mexico, Man*, xix (1919), 34-5; "Further Notes on Isleta," 165; Parsons, E. C.: "Mother and Children at Zuñi," *New Mexico, Man*, xix (1919), 169; Parsons, E. C.: "Hopi Mothers and Children," *Man*, xxi (1921), 100.

¹⁷ Cf. Stevenson, M. C.: "The Sia," p. 139, 11th (1889-90) Annual Rep. Bur. Amer. Ethnol.

SANTO DOMINGO

CLANS

There are six matrilineal exogamous clans:

<i>shu'tsuna</i>	Coyote	<i>shuwamo</i>	Turquoise
<i>peh'laka</i>	Toad	<i>kürts</i>	Antelope
<i>yak'a</i>	Corn	<i>osashē</i>	Sun

Shu'tsuna is the largest clan. The *shu'tsuna hano* who come from Sia are called *kwi'shkē' shu'tsuna*, Grey Coyote. My informant was a *shu'tsuna* clansman and so was his father, "but he was *kwi'shkē' shu'tsuna* from Sia," he added quickly, indicating that his parents' marriage was thereby less endogamous.¹⁸ "No, they don't have *shu'tsuna hano* at Laguna, *they would be afraid of them.*" Some of the Corn clanspeople come from Laguna. There are but few Sun clanspeople.

CLAN ELDERS

There are four clan heads to each clan—*nawai'y^a*. A Corn clan head, for example, is called *yaka hanoch nawai'y^a*. The clan heads, and only the clan heads, not other clansmen, make prayer-sticks at the solstices.

ESTUFAS (*CHY'KIA*)

There are two—*tani* and *shu'wamo*. The children of a family may alternate in joining, one child joining the one, the next child the other.¹⁹ But when I asked my informant how he came to belong to the Turquoise *chy'kia*, he said because his father belonged to it, adding that his sister also belonged to it and also his mother, since at marriage a woman will "go over" to her husband's *chy'kia*. No *chy'kia* name is given to a child. You get your Indian name through a friend of your mother's, whom you subsequently call "mother," her husband, "father." Certain dances, for example *ahtset'ana* (at Laguna, *owinaiye*, according to my informant, not *ahina*) which is danced on August 4, the day of

¹⁸ Cf. "Laguna Genealogies," p. 206, n. 5.

¹⁹ Cf. "Further Notes on Isleta," 156.

the saint, Santo Domingo, are danced by two sets of dancers alternating from each *chy'kia*.

CH'A'NI

<i>shika</i> or <i>shikami</i> ,	5 or 6
<i>shkoyu</i> (Giant),	9
<i>k'osha</i> [i. e. <i>koshare</i>],	9 or 10

The single *sii* (Ant) *ch'a'ni* is from Zuñi. There are no women *ch'a'ni*.

The *shikami* would treat burns or snake bite, the Giant, gunshot or lightning. The lightning struck will not recover if he is seen when struck. If not seen and if there is a subsequent clap of thunder, he will recover. He has to go into a retreat of four days. . . .²⁰ *Ch'a'ni* use their own rooms, not the estufas.

GOVERNMENT

The *tiahmun' hoxcheni* has to be a *shikami ch'a'ni*. He has also to be a Coyote clansman. The present incumbent is a young man, in office but two years. He is *shuxtsuna*; his predecessor was from the *kwi'shk'* *shuxtsuna* of Sia. The *tiahmun' hoxcheni* decides on the dates of the solstices, *k'owatyesh* (winter solstice) and *k'oashiwanyat'yia* (summer solstice) which is a *ch'a'ni* ceremony. *Oshash g'ama*, Sun, his house, was a familiar concept.²¹ The *tiahmun' hoxcheni* uses his own house, not the estufas.

There are no more *u'pi*. My informant had seen them as a child.

The officers are *tapup'*, governor; one *tapup'* *tinyent'*, lieutenant-governor; five *pishkal* (to look after the church) and two *pishkai tinyent'*. On Sunday the *pishkal* visit the houses and whip with the whip (*usheyani*) which hangs in the church²² (*misa k'ay'*) all persons found at home. As at Laguna, the officers make prayer-sticks in the form of crosses. There are six *k'apitan* or *ts'atio hoxcheni*. They watch around the church, also at cures.

²⁰ Cf. "Laguna Genealogies," p. 275.

²¹ Cf. Parsons, E. C.: "Notes on Acoma and Laguna," *American Anthropologist* (N. S.), 20 (1918), 184.

²² Dumarest, p. 202; Parsons, E. C.: "Fiesta at Sant' Ana, New Mexico," *The Scientific Monthly*, vol. XVI (1923), p. 179.

HUNT

The communal hunt is in charge of the two *shai'ya* who say the prayers and build the ceremonial fire.²³ The *shai'ya* are not thought of as *ch'a'ni*. Women go in the hunt as at San Felipe. The quarry is for the dancers.

DANCES

The *we'latsukya* (Apache) of Zuñi²⁴ was mentioned as having been danced two Christmases ago. *Ko'manchi* was danced another Christmas. *Hi'lili*²⁵ was danced from house to house. All these dancers were without masks. "We don't have many masks." In the *shiwana* dances [mask dances] there is one girl impersonation—*kuchininaku*.²⁶ There is one girl, *malinch'*, the wife of Montezuma, to the twelve men in the Christmas-tide Mexican dance, *matachina*,²⁷ which is danced every four or five years. Each man carries a stick²⁸ in his left hand, in his right a gourd rattle, and on his head is a crown of tin with a cross on top. He wears white cotton trousers, and ribbons from his head. At Christmas there is also a San Ildefonso dance, with girls. During the winter there is a Buffalo dance, *mushat'h' ochini*, danced outside in *k'ak'at'i*. Indoor masked dances are always danced in the *chy'kia*.²⁹

MARRIAGE

Marriage is, theoretically at least, an enduring relationship. "Zuñi don't marry long, go get another one. . . . We don't

²³ "Laguna Genealogies, p. 237."

²⁴ See "Winter and Summer Dance Series in Zuñi in 1918," pp. 177-8.

²⁵ Parsons, E. C.: "Notes on Zuñi," *Memoirs American Anthropological Association*, vol. iv, no. 3, pp. 220-225, 1917.

²⁶ Yellow woman. The female impersonation in the Laguna mask dance is also so-called. (Zuñi, *kok'wele*, god girl.)

²⁷ Cf. Bandelier, A. F.: "The 'Montezuma' of the Pueblo Indians," *Amer. Anthrop.*, v. 325, 1892. Bandelier opines that *malinche* is a Nahuatl corruption of the Spanish name *marinā*; but *malinche* may be a still older Nahuatl term (See Radin, P.: "The Sources and Authenticity of the History of the Ancient Mexicans," p. 73, Univ. California Pubs. in Amer. Archaeology and Ethnology, xvii, 1920).

²⁸ My informant pointed to Fig. 23 in the copy of "Notes on Cochiti, New Mexico," which I was showing him.

²⁹ *Naitsetako* or *nyatsela^{kyu}* (see Dumarest's list of dances, p. 184) means "they are going to have a dance."

do that way." In theory, too, a woman always goes to live at her husband's house.³⁰

BURIAL

It is in the churchyard, and the sexes are buried apart, the men to the left of the central cross as you face the church, the women to the right—just as at Zuñi,³¹ and in no other pueblo I know of.

TOWN NAMES

<i>kix'wa</i>	Santo Domingo	<i>t'aos</i>	Taos
<i>k'oxtyitye</i>	Cochiti	<i>g'atyishdye</i>	San Felipe
<i>pa'kwet²</i>	San Ildefonso	<i>leh'leta</i>	Isleta
<i>ginyityikyí</i>	Santa Clara	<i>g'awak'a</i>	Laguna
	San Juan		
<i>hemishsits'a</i>	Jemez	<i>tsürnitse'³²</i>	Zuñi

NEW YORK CITY

³⁰ Cf. Dumarest, p. 148.

³¹ In Zuñi the church is orientated with the long axis east and west, facing east, burials being therefore north (women) and south (men) of the cross. The Santo Domingo church was said to be orientated west and east, facing west, men buried to the north, women to the south; but of this orientation I am uncertain.

³² The people were referred to as *shiwanakwe*.

ON THE SIGNIFICANCE OF MATRILINEAL CHIEFSHIP

By WILLIAM CHRISTIE MACLEOD

UNDER the term chiefship as here used we include only that civil office in which the incumbent is the head of a family and has under his rule a band of families, a tribe, or a nation. Such chiefs are, for example, the band chiefs of the north and east Algonkian, the chiefs of the households of the Nootka, of the households or matrilineal "families" of the Iroquois; the tribal head chiefs of the Nootka, Coast and Delta Salish, Tsimshian, etc., and the kings of the Natchez, many African states, modern European nations, etc.

The first essential fact we have to note about this office is that universally it is the prerogative of an adult male.¹

¹ J. M. B. McGovern, "Among the Head Hunters of Formosa," Boston, 1923—a popular digest of materials later to be presented in detail—speaks as if the chiefs of the tribal and lesser groupings of the Malayan Formosans were women, and states that the group councils are composed of the "elderly women" of the group. Miss McGovern is nowhere explicit however; the functionary concerned is sometimes referred to in her narrative as the "queen" and sometimes as the "high priestess." Chiefs in every culture have priestly as well as political duties, but it seems to me from a perusal of the popular presentation of the Formosan data referred to that the author is stretching a point in calling the high priestesses of the Formosans also queens for the sake of arousing popular interest, and we must await the forthcoming scientific presentation of the material before an appraisal of the situation. To judge from earlier informants it seems to me that the women concerned were not chiefs, and that for large aggregates such as the tribe the Formosans, like many American tribes such as the Haida and Tlingit, had no head chiefship, though apparently some of them had something in the nature of a head priestess. See McGovern, *op. cit.*, pp. 121, 124, 126. Cf., particularly, G. Candidius, "An Account of the Island of Formosa," (1670) in J. Churchill, "A Collection of Voyages and Travels," London, 1702 seq., p. 530, on political organization, and p. 533 on priestesses; and J. W. Davidson, "The Island of Formosa," London and New York, 1903, pp. 560-590, for a digest of data according to tribes, collected by a Japanese investigator. Cf. also W. A. Pickering, "Pioneering in Formosa," London, 1898, p. 151 seq; O. Wiedfeldt, "Wirtschaftliche, Rechtliche, und Soziale Grundtatsachen und Grundformen der Atayalen auf Formosa," pp. 1-55, in *Mitteilungen der Deutschen Gesellschaft für Natur- und Völkerkunde Ostasiens*, in Tokio, v. 15, 1914; and Perry, W. J.: "The Megalithic Culture of Indonesia," pp. 141-148.

Occasionally it is held by a child, the functions of the office, pending the child chief's maturity, being exercised by a "seat warmer" or regent. Occasionally also, which is more significant, the office is held by a female. A child holds office only among those peoples with whom the chiefship has become definitely hereditary and the heir presumptive may not be passed over.² A woman holds office only where the office is strictly hereditary in a given family and when no eligible male heir is available—one near enough in blood to be considered acceptable in preference to a closely related female who can be expected soon to bear a male son and so perpetuate the chiefship through the direct line of descent.

An example of the type of situation which gave rise to the installation of queens even among so-called "primitive" folk may well be noted at length at this point, in part because of certain remarkable features which will interest us more in a moment. In the year 1660 the Piscottoways (Ganawagas, Conoys) of Maryland applied to the governor of the province for ratification of their choice of an "emperor," and to his inquiry as to their customs relative to succession they replied that the office went, on the death of an incumbent, to his brother, "and for want of such, to a sister's son," and stated that in such wise the office had descended from their first emperor—who had been some one come to rule over them from the Eastern Shore of Maryland—for thirteen generations, without interruption, until the time of the emperor

² The data of historical Europe is familiar enough. Cf. also the Stseelis and Skqomic Salish, where, if an heir is too young, a "seat warmer" (regent) acts till the heir is of age. Vide Chas. Hill Tout, in the *Journal of the Anthropological Institute of Great Britain and Ireland*, 1904; "The Stseelis and Skaulits," pp. 311-376, and "The Siciatl," pp. 20-58; also Franz Boas, "First General Report on the Indians of British Columbia," *Annual Report of the British Association for the Advancement of Science*, 1889, p. 833.

In Uganda and Loango custom definitely forbade the enthronement of a queen, and the fear that the Christian party in Uganda might imitate European custom and install a queen was one cause of a civil war in Uganda precipitated by the conservative elements. (Vide references cited in *supra*, p. 503, n. 15(c). The Vai also seem to have prohibited women chiefs, but circumstances brought about the actual, though perhaps not legal, exercise of the functions of the chief's office by a woman in at least one case. Vide *supra*, p. 400, n. 10 (c).

Kittamaqund who preceded the emperor just deceased. Kittamaqund had died without having brother or sister, (and, presumably, without a sister's son) to succeed him, and took it upon himself, therefore, to appoint his daughter to be "queen." The people rejected this appointment, however, as contrary to tribal custom and chose as emperor, Weghucasso, who was descended "from one of the brothers, which one, they knew not, of the first emperor." "And Weghucasso at his death appointed to be king some other descendant of one of the first kings." This appointee was "Jan Jan Wizous, which in their language signifies a true king. And [they] would not suffer us to call him Towzin, which is the style they give to the sons of their kings who by their custom are not to succeed in rule, but his brothers, or the sons of his sisters."³

To avoid possible misconceptions it is perhaps important

³ In the Maryland Archives, Proceedings of Council, 1637-1667, p. 403; cited in the Handbook of the American Indians, Bull. 30 of the Bureau of American Ethnology, article "Conoys." These people were Algonkian, related to the Nanticoke, and, therefore, to the Delawares, were near neighbors of the Algonkian Powhatan confederacy of Virginia, and in intimate contact with the powerful Iroquoian tribes of the Susquehanna River.

It is to be noted that the chief who attempted the innovation lived and died about the time of the very earliest settlement of this region by the whites. European customs may have influenced him. Evidently Weghucasso also died without a regular heir. Here we may well suspect that *both Kittamaqund and Weghucasso were up against a situation new in the history of their office*, and that this was brought about by the decimation of the native families by European diseases and firearms. (Syphilis and gonorrhea have been particularly disastrous among the American natives in causing sterility and frequency of stillbirths.) (Cf. *supra*, p. 499, n. 9.)

For regular cases of installation of women chiefs see Franz Boas, "Tsimshian Mythology," in 31st Annual Report, Bureau of American Ethnology, pp. 355, 430-431, 496-499, 500, 503, 527; A. G. Morice, "The Canadian Dénés," in Canadian Archeological Report, 1905, pp. 201-202; Chas. Hill-Tout, "Salish and Déné," London, 1910, pp. 60-61.

The possibility that further investigation may prove the Formosan priestesses to be also actual chieftainesses interests us in the unique regulations for the inheritance of their office. In some tribes the office is not hereditary. Where it is hereditary it descends *from mother to daughter*. And, Miss McGovern remarks, "over some groups male chiefs rule; this apparently being usual when the old queen has died without leaving a daughter." (This is a type of inheritance which is found applying to property held by women in many other cultures, a type which for easy reference, since the Formosans have so dignified it, we might refer to as "matrifilial." Vide McGovern, *op. cit.*, p. 121. Cf. *supra*, p. 1, n. 1.

at this point to consider a practice prevailing among the southern Kwakiutl of British Columbia. For them Boas reports that patrilineal inheritance is the rule for certain ceremonial offices in the annual or winter ceremonies of the secret societies such as that of master-of-ceremonies, those of caretaker of the drum, of the batons, of the eagle-down, etc. Civil privileges also are sometimes so inherited but much the larger number of these are given by a father to his son-in-law expressly in trust for the donor's grandson.⁴ Hill-Tout has noted for the not-distant Siciatl that the chiefship, a civil "privilege" on the Northwest Coast, may be so inherited, or bestowed; regularly it goes to the eldest son of a chief but where there is no son the son-in-law will succeed,⁵ as a consequence of which in the third generation the reigning chief will be the grandson of the chief whose son-in-law succeeded, the chiefship thereby descending in the direct line of succession just as if the daughter herself had actually succeeded to the office and exercised its functions. It has been suggested that the practice of the southern Kwakiutl indicates an adaptation of a former patrilineal inheritance to concepts diffused from the tribes farther up the coast with whom all privileges and property including the privilege of chiefship descend matrilineally.⁶ However, it has also been pointed out that the kinship terms of the Kwakiutl correspond to a loose organization in which relationship is reckoned bilaterally,⁷ as is the case with the closely related Nootka. For the Nootka Sapir has shown that privileges are inherited through both the male and female lines, with a preference for the male line, the inheritance of privileges being in a measure conditioned by the fact that privileges are not only personally owned but also definite-

⁴ Boas "The Social Organization and the Secret Societies of the Kwakiutl Indians," *Annual Report of the U. S. National Museum*, 1895, pp. 334-335. Cf. Boas "Tsimshian Mythology," p. 478, and, "Tribes of the North Pacific Coast," *Canadian Archeological Report, Anthropological Section*, 1905, p. 238 seq.

⁵ Hill-Tout on the Siciatl, *op. cit.*, p. 23. When there is no daughter, and therefore no son-in-law, the office goes to a brother of the retiring or deceased chief.

⁶ Boas, *op. cit.*, 1895, pp. 334-335; Goldenweiser, A. A.: "Totemism; An Analytical Study," *Journal of American Folklore*, vol. 27, 1910, p. 284 seq.

⁷ Boas "The Social Organization of the Kwakiutl," *American Anthropologist*, vol. 21, 1919, p. 125, and "Tsimshian Mythology," p. 478.

ly associated with the local group among whom they originated.⁸ More data, especially on the inheritance of the particular privilege of chiefship, is desirable, but it seems evident that *the Kwakiutl represent simply a people reckoning bilaterally, but who, like all peoples whose developing institution of chiefship has not been affected by the influence of a matrilineal kinship reckoning, tend to develop a patrilineal inheritance of office.* Rather than being an indication of influences from the northern tribes and an adaptation to the idea of a matrilineal reckoning, the peculiar Kwakiutl inheritance practice we have noted is simply an indication of Kwakiutl concern that privileges in general should descend patrilineally.⁹ And, in case a chief only has daughters, the Kwakiutl, like the Siciatl, with the son-in-law arrangement are able to keep the chiefship in the direct line of descent and at the same time avoid having a woman chief or queen.¹⁰

⁸ Sapir, E.: "The Social Organization of the West Coast Tribes," Transactions of the Royal Society of Canada, 1915, p. 366. The unit local group is the "sept" of Hill-Tout and the numaym (Kwakiutl) of Boas; and is in origin and essence fundamentally the same as the band of families primary in the social structure of less developed tribes such as the cruder Athabascan and Algonkian.

⁹ E. S. Curtis, "The Kwakiutl," v. 10 of the series, The North American Indian, 1910, Plimpton Press, Norwood, Mass., p. 90, states that the chiefship of the Kwakiutl is conceived of as very definitely patrilineal and descends regularly from father to eldest son.

The splendid set of Kwakiutl family histories collected by George Hunt, a native, under the guidance of Dr. Boas (vide "Ethnology of the Kwakiutl," 35th Annual Report of the Bureau of American Ethnology, pt. 2) are useful in this connection. In surveying them, however, it is necessary to take into consideration the childlessness caused by the introduction of white men's venereal diseases, etc. (Cf. supra, p. 3, n. 3.) For the Kwakiutl, for instance, Curtis records a case of a childless couple keeping their ancient family in the public eye by *pollatching in favor of their family dog*, whose dog name being hereditary and the peculiar privilege or property of the family thereby acquired new and increased lustre (Curtis, op. cit., p. 139). For the Tsimshian farther up the coast with whom all inheritance was matrilineal, Boas states that, when a man's family is about to die out, the adoption of an heir is legal. A case is recorded where a man's mother's father adopted him and gave him the legal status of a sister's son, thus making him heir to all his privileges. This man, so adopted, later adopted his own daughter into the status of a sister; she then could bear him an heir who would be *legally his nephew but actually his grandson.* (Vide Boas, "Tsimshian Mythology," p. 500.)

¹⁰ (a) In the kingdom of Acra on the Gold Coast inheritance of the kingly office was matrilineal, but in default of a brother of the king to succeed, the king's sister's

We may now confine ourselves to the actual matrilineal chiefship. Typically, though not always, it is correlated with the mother-sib. Despite the fact that with many peoples among whom the sib, and, specifically, the mother-sib, is a vital, living, institution—such as the Iroquois, the Haida, etc.—the sib content does not include the concept of even a fictitious kinship between its members, it yet remains obvious that sib membership, whether patrilineally or matrilineally reckoned, is acquired through actual blood relationship to a father or a mother member. It is equally obvious, and is perhaps superfluous to observe, that chiefship also, whether transmitted matrilineally or patrilineally, is inherited by virtue of actual blood relationship to the former in-

husband succeeded (vide Barbot, J.: "North and South Guinea, Angola, etc." in Churchill, J.: "A Collection of Voyages and Travels," v. 5, London, 1732, p. 248. This fact has a decidedly different cultural setting from the Kwakiutl data, but nevertheless is comparable in so far as the point at issue is concerned. Cf. *supra* p. 508, n. 27.

(b) Hill-Tout, *op. cit.*, 1910, p. 163, indicates that son-in-law inheritance, where the daughter has no brothers, was a custom among the Bella Coola and the Coast Salish generally. However, for the Lkungen Boas noted that, when a chief had no sons, his office went to a brother, and might not be inherited by a daughter or a son-in-law (Boas, "The Lkungen," *Ann. Rep. Brit. Asso. Adv. Sci.*, 1890).

(c) Women chiefs are recorded not alone for matrilineal tribes but also for patrilineal ones. Vide O'Callaghan, "Documentary History of New York," v. 13, p. 26, where we note a "squaw-chief" at Catskill, New York, 1650, De Forest, "Indians of Connecticut," p. 52, where we hear of a sister of a sachem becoming the chieftainess of the Quinnipiacs; and for reference to the squaw sachem of Pocasset, 1675, vide Nelson, "The Indians of New Jersey," Paterson, N. J., 1894, p. 92, n. 3. See G. W. Ellis, "Negro Culture in West Africa," N. Y., 1914, p. 174, for an example among the Vai, with whom chiefship is patrilineal where a wife of the dead king held the throne through the vicissitudes of a civil war in order to transmit it to her immature son against the usurping brother of the deceased king. Cf. *supra*, p. 496, n. 2.

(d) It should perhaps be noted, in closing, that Hartland (in "Matrilineal Kinship and the Question of its Priority," *Memoirs of the American Anthropological Ass'n*, vol. IV, pt. 1, 1917) starting with his assumption of a one-time universal prevalence of the mother-sib, considers the southern Kwakiutl to be a people among whom the mother-sib is in the last stages of decay, and falls upon the son-in-law inheritance we have discussed as valuable support for his thesis—evidence I trust now shown clearly to afford no support. It is true that the northern Kwakiutl—about whom, however, we have almost no data—showed indications that their local groups were tending to evolve into mother-sibs (or, as Hartland would put it, among whom the sib had gone less far on the road of decay than among the southern Kwakiutl). (Cf. Boas "The Mythology of the Bella Coola Indians," *Jesup Expedition reports, American Museum of Natural History*, v. I, p. 121; "Tribes of the North Pacific Coast," p. 238 seq.)

cumbent of the office.¹¹ But a matrilineal reckoning for an office which is universally the prerogative of a male and his male successors appears as a noteworthy phenomenon, particularly in view of the fact that different types of inheritance reckonings for different prerogatives, privileges, things, relationships, etc. may be contained within the same culture¹² considered in connection with the processes by which chiefship undoubtedly evolved. A definitely instituted chiefship is itself an office which cannot be placed too far back in social evolution; and the concept and practice of the inheritance of the office exclusively within some one family of the group of families concerned must be placed relatively later, in that obviously intermediary developments remain on record as the existing practice of many peoples—though very definite records of this gradual evolution for any one people are hardly available. This evolution of the concept of band and higher chiefships as hereditary within a given family and even, as with many peoples, through an inflexible rule of primogeni-

and "First General Report on the Indians of British Columbia," p. 844.) We are, however, familiar with the eminent probability that the sib may be diffused to sibless peoples; and one of the processes by which this diffusion may take place has been in one case actually perceived—among the Algonkian bands of the Ottawa River valley (vide Speck, G. F.: "Family Hunting Territories and Social Life of Various Algonkian Bands of the Ottawa Valley," Memoir 70, 1915, Geological Survey of Canada). Although we have no such conclusive historical evidence for the Northwest Coast as Speck's for the Algonkian mentioned, there can be little doubt that diffusion of the mother-sib took place on an extensive scale; cf. Morice, "Are the Carrier Sociology and Mythology Indigenous or Exotic?" Transactions of the Royal Society of Canada, 1892, (which writing is, I believe, the first statement of the case for diffusion of the sib.)

¹¹ Cf. *supra* p. 505 seq

¹² Cf. Crow and other data in R. H. Lowie's still stimulating volume "Primitive Society," MacMurtrie, N. Y., 1919. A most remarkable example and particularly relevant is afforded on the authority of Barbot. In the kingdom of Acra on the African Gold Coast property was inherited matrilineally while the kingship was inherited patrilineally; with the surrounding tribes of the coast just the reverse was true, property descending patrilineally and the chiefship descending matrilineally. Vide Barbot, *op. cit.*, p. 268 seq. Cf. *supra*, p. 508, n. 27. Yuchi data is even more interesting (vide Speck, G. F., "Ethnology of the Yuchi," Publications of the Museum, Un. of Penn., Anthropology, v 1, 1911). With the Yuchi sib membership and chiefship are matrilineal, but membership in the two great warrior societies is patrilineal. Speck in his monograph points out that McKenney and Hall noted among the Sauk a division of the tribe into two societies, but membership in these cut across

ture¹³ took place of course concurrently with the development of concepts of the inheritance of other things such as sib membership, real and personal property, songs, names, ceremonial and other offices, etc. The data of primitive and other society, history, contemporary life, I believe it must be admitted, indicate that the desire of a father for the aggrandizement of one or all of his own progeny is a primary and powerful motivation, and when not countered by more urgent psychological or cultural tendencies must be considered as inevitably leading to the evolution of a patrilineal chiefship in which the incumbent's son and grandson

the family, one child going into one society, the next child into the other, and so on. McKenney and Hall's notes were made circa 1844, and the Sauk did not go to Oklahoma until 1867. The Yuchi removed to Oklahoma, where the Sauk became their neighbors, in 1837—thirty years before the Sauk. (Vide Sauk, Fox, and Yuchi articles in the Handbook of American Indians of the Bureau of American Ethnology.) It remains to be learned if the Yuchi had their society organizations prior to contact with the Sauk in Oklahoma. If they did it seems possible that we may have here some unique case of diffusion. Swanton has shown that the Yuchi are in all probability migrants into the Southeast from the Ohio region where they were known at an early date as the Chisca (vide Swanton, J. R.: "Early History of the Creek Indians," Bull. 73 of the Bureau of American Ethnology, 1922), and it is not inconceivable therefore that Sauk and Yuchi may have known each other before the southeasterly migration of the Yuchi. But whether diffusion or independent development is considered to loom largest in this and the numerous other cases of disharmonious inheritance schemes existent in any one given culture (cf. *supra*, p. 509 *seq.*), they remain as support for the suggestions offered in the text above.

¹³ The term primogeniture we may apply to any type of inheritance in which eligibility begins with the nearest blood relative. The varieties of primogeniture are, so far as I can see, *attributable to the same fundamental tendencies*. The eldest male of those appointable to the succession by the incumbent of the office upon mortal illness or retirement, in a tribe where such selection of possible heirs by appointment is the custom, will, for example, mature earlier than the younger ones, and other things being about equal, will have had more opportunity to demonstrate his capacity and win the good-will of the chief and the tribesmen. (Cf. *supra*, p. 521 *seq.*) And again, the birth of the first possible heir has often been the occasion for ceremonialized rejoicing upon the part of chief and tribe, the psychology of the situation making for the prestige of the first-born in the hearts of both chief and tribesmen. (Cf. Dobrizhoffer, Martin: "An Account of the Abipones," 1784, London, 1922, 3 vols. Vide v. 2, p. 122.) The psychology of the mere idea of priority, which certainly was important even where primogeniture was not wrought into the institutional structure as a fact bestowing special privilege, I believe must also be considered as a factor. ("First come, first served.") The first student entering a classroom on the first day of college chooses what he considers the choice seat, and virtual ownership of it, no untoward event transpiring, is conceded to him by both students and professor!

succeed.¹⁴ The fact that, not alone among peoples with the father sib, but typically also among peoples with a purely bilateral system of counting blood relationship the chiefship, where it is hereditary at all, is transmitted patrilineally is significant. One may note also such significant data as that from the Tsimshian where, although the mother-sib is still vital, chiefs and rich men, at least frequently, exert themselves to the utmost in the use of their influence and in the lavishing of their resources to benefit their sons,¹⁵ and cross-cousin marriages are very prevalent among the families of chiefs, to the end that a chief's children may benefit and his heirs in the succeeding generation be of his own grand-

¹⁴ In both patrilineal and matrilineal inheritance very often the brothers of the incumbent of the office are awarded priority over the son or maternal nephew, as the case may be

¹⁵ Cf. *supra*, p. 509 *seq.* and Boas, "Tsimshian Mythology," pp. 355, 431, 478, 497. With the Tsimshian, according to the tales, clan hostilities sometimes made fathers and sons bitter enemies (cf. Boas, *ibid.*, 1910-11, p. 306 *seq.*) But so also in modern Europe and America, consider our American Civil War, for example, and the generality of situations such as are depicted in Ivan Turgenev's beautiful novel, "Fathers and Sons"

Vanity, the love of one's own portrait, the desire for the historical perpetuation of one's own personality, I believe, must be reckoned as of importance in the developments referred to as well as natural affection, especially among those peoples where extreme polygamy resulted in the production of a large number of children by a chief or king—the love of a son as an heir rather than as a son. Note for example the African kings who put to death many brothers and sons in order that the son who succeeds may be more sure of having as his heritage the whole kingdom of his father rather than some fragment of it which might be left after one or more wars of succession. (Cf. *supra*, pp. 512, 514.)

In connection with this and with the matter of primogeniture other African data is of interest, and illustrative of the psychic content of the customs we are dealing with. There is the extraordinary ruling of the Yoruban tribes that the king's eldest son must commit suicide on the death of his father. In 1860 an eldest son refused to follow this rule and a large section of the kingdom revolted at his sacrilege, but the uprising was suppressed and the custom was broken. (Vide Ellis, A. B.: "The Yoruban-Speaking Peoples," London, 1894, p. 167.) (With the Yoruban tribes chiefship and property descend patrilineally; there is no unilateral reckoning of blood relationship.) Ellis, *ibid.*, p. 175.) With the Baganda the eldest son of the king is excluded from the succession because, according to the natives, he takes the title and office of Kiwewa, caretaker of his brothers—the reason given, of course, being far from an adequate explanation (Cf. Roscoe, J.: "The Baganda," London, 1911, p. 188.) And so also with the Baganda commoners. (Roscoe, J.: "Further Notes on the Manners and Customs of the Baganda," *Journal of the Anthropological Institute of Great Britain*

children.¹⁶ And it is to be noted that in the evolution of inheritance of the chiefship we must consider that the chief in office was certainly a prime mover in making the office hereditary, in tribes where it is not in a specified series, the incumbent having appointive power, subject to tribal ratification, and in any case considerable influence, on the choice of his successor.¹⁷ I conclude that *a matrilineal chiefship cannot be considered to have*

and Ireland, v. 32, 1902, p. 47; cf. p. 51.) There may be a genetic connection between these Yoruban customs and the Baganda customs, and between them and the Baganda custom providing that "If the wife of a chief [only of the commoner chiefs apparently] or of any other important personage has as her first-born child a son, the midwife strangles it, and reports it stillborn; this is done to insure the life of the father; if he has a son born first he will soon die, and the child will inherit all he has." (Roscoe, 1902, p. 30.)

¹⁶ Occasional cross-cousin marriages of convenience such as those of the Tsimshian must, it seems to me, be distinguished from such marriages where they are obligatory, universal, or customary, and not economically and socially motivated as apparently are those of the Tsimshian.

¹⁷ Cf. supra, pp. 497, 521, Boas, "Tsimshian Mythology," pp. 355, 431, 478, 497, and Barbot, op. cit., p. 371. (The Benin king appoints one of his sons as his successor.)

Other factors of course must also be taken into account in explaining the evolution of hereditary chiefship; and they varied, certainly, in their relative cogency, from culture to culture, meeting here and there counteractive tendencies of various sorts. There is, for instance, the tendency to accord respect to the most ancient or ancestral family of a group; the fact that the qualities leading originally to leadership would tend to be hereditary within the family; that chiefs' families tend to intermarry and so concentrate prestige and the personal basis of prestige within a limited circle (later to become an aristocracy); that the children and other near relatives of a chief possess social prestige and personal inspiration to the development of their latent personal talents more than other tribesmen, by virtue of their eminent relationship and distinguished associations; and that nearly everywhere the acquisition of surplus wealth, making possible its ostentatious distribution, has been a qualification leading to civil chieftaincy, and the office once reached, through the receipt of return gifts, dues, etc., and intermarriage with similarly fortunate families, tends to perpetuate within the chief's family the desirable ability to ostentatiously distribute surpluses of wealth. (Veblen's thought that such ostentation is peculiarly modern is because like so many social scientists he is under the influence of the ancient concept that there is a categorical distinction between the data of "primitive" and "civilized" society.) The writer may add, parenthetically, that if these notes on the evolution of the chiefship and inheritance are valid, they are particularly significant in that *they indicate the evolution of situations which have been among the most fruitful causes of disastrous wars in the world*—wars of succession (behind which of course other issues were sometimes concealed). Consider, for example, the lamentable disturbances of ancient China characterizing every chapter of, say, F. Hirth's "The Ancient History of China to the End of the Chow Dynasty," Columbia Univ. Press, N. Y., 1911.

originated save among peoples with whom the mother-sib has obtained, the independent or imitative development of the mother-sib, whatever may have been its own causes, when antecedent to the actual establishment of the inheritance of the chief's office, serving to mould the ideas concerning the inheritance of the chiefship according to the mother-sib concept of inheritance and preventing the expression of the tendency toward a patrilineal inheritance.¹⁸

An interesting alternative explanation of matrilineal chiefship is deserving at least of consideration, an explanation which may have had indigenous or foreign origin or both. According to the eighteenth century observers, Le Petit, Du Pratz, and Dumont, the matrilineal chiefship of the Natchez "is founded on the knowledge they have of the licentiousness of their women. They are not sure, they say, that the children of the chief's wife may be of blood royal, whereas the son of a sister of the great chief must be, at least on the side of the mother." Dumont adds the phrase, "since the womb cannot lie." However, the tribal origin myth recorded by Du Pratz merely states that the mythical ancestor of the royal line prescribed the matrilineal rule, no reason being assigned for it¹⁹ The further explanation may be the product of French imagination or it may be a veritable explanation made by the tribal authorities; or it may have come from the "people," in which case we recall that the temple caretaker warned Du Pratz that the people, and especially the women, with whom the travellers had the most intimate associations, were ill-informed on the *official* "history" of their national culture.²⁰ For the Natchez, for whom we have no evidence sufficient for us even tentatively to decide whether any form of the sib

¹⁸ The Carriers (vide Morice, op. cit., 1892) might be cited as a case where the non-hereditary chiefship of the primitive Athabaskan (Déné) band was so moulded by imitation of the mother-sib concepts of their Tsimshian neighbors. Cf. *supra*, pp. 500, n 10, 520

¹⁹ Vide Swanton, J. R.: "Tribes of the Lower Mississippi Valley," Bull. 43, Bureau of American Ethnology, 1911, pp. 103-104, 170.

²⁰ Le Page du Pratz: "Histoire de La Louisianne," Paris, 1758 (3 vs.). Vide v. 3, p. 62.

was a part of their culture,²¹ this explanation might seem to have a significant bearing on the cause of the matrilineal descent of their kingly office, particularly in view of the fact that with them their nobility was obliged by immutable custom to take spouses, male or female as the case might be, from the lowest stratum of the common people, only one parent therefore being of royal blood. But the indications are that this explanation is no more than a rationalization of a custom whose origin is lost in antiquity.²² Ellis reports the same explanation among the Tshi

²¹ Du Pratz was for eight years a neighbor of the Natchez and notes nothing which even suggests the existence of a sib with its unilateral reckoning of kinship; but it is very possible that his absorption in the more striking political phenomena of the Natchez state was responsible for his overlooking such data. The origin myth Du Pratz received, part of it from the Great Sun or King and part from the caretaker of the temple, does not afford us any evidence negative or positive; but this myth may be fragmentary, since the two parts were given to Du Pratz in answer to specific questions on certain traits of Natchez culture. Of the one case of divorce which he knew Du Pratz states that "Each [parent] took the children of the same sex"; this, however, is only data on residence. An informant of Du Pratz records in some detail the procedure and ceremony involved in marriage both for the nobility and for the commoners but mentions nothing of matrilineal reckoning, crests, or eponyms. Charlevoix states that women of the nobility may "turn away" their commoner husbands when they please and "take others, provided there is no relationship between them"; but whatever significance this might have in connection with certain other facts of the culture is lost when we note that Le Petit, using the same lost source, puts it that the new husband must be one "who has not made any other alliance among them," the meaning of which is also obscure. The Natchez circa 1730 were uprooted by the French and the royal family sent into slavery in the West Indies; most of the tribe joined the Creek confederated tribes in a body, forming a village near the Abihka, with whom they intermarried extensively. The mother sib is reported for the Natchez of this period, but it may well be that they acquired the institution through intermarriage—the process by which it was being acquired by the Ottawa River Algonkian (cf. *supra*, p. 500, n. 10(d)). However, Stiggins, a member of the tribe, writing of his people in the early part of the nineteenth century states that "Their ancient manners and customs, it is said, were similar to those of the Au bih kas, so they had to make no change in their habits of life by their removal." Stiggins, however, may be thinking only of the many other correspondences between Natchez and Creek culture and not thinking also of the sib which would have crept imperceptibly into the Natchez social structure. Finally, we note that when the natives attempt to explain to the whites the peculiar obligation of royalty to marry outside their caste—marriage of an exogamous type—no mention is made of anything suggesting the sib. (Vide Swanton, *op. cit.*, 1911, pp. 95, 247, 108, etc. For Stiggins vide Swanton, *op. cit.*, 1922, p. 314.)

²² Such, for example, as that of the Carriers, who, borrowing certain songs from the Tsimshian, to be sung at the inauguration ceremonies of Carrier chiefs—the

speaking peoples of West Africa—who include the Ashanti—but states that it is made by “Europeans and anglisized natives,” implying I take it that it is not made by uninfluenced natives; and it is among the Ashanti that royal women may be allowed with the King’s permission to cohabit with commoners.²³ The fact that the Ashanti royal women may, unlike the Natchez royal women, marry royal men, indicates that *this marriage outside of the caste is not necessarily something which leads to a matrilineal reckoning but that the matrilineal reckoning is what makes such an arrangement conceivable even in a relatively advanced period of social evolution.* (The details of the Ashanti custom and its cultural complex suggest that the practice referred to is a relatively recent innovation.) Penn notes for the Delawares²⁴ and Le Jeune for the Montagnais(?)²⁵ the same explanation, not stating whether it is the native explanation or an interpretation of their own. In fact, the explanation is met with for cultures here and there over all the world during the time of the great discoveries in the sixteen and seventeen hundreds; but strangely enough it has never been reported from any natives (to my knowledge) by any competent scientific observer—which contrast indicates that we are dealing with an interpretation by Europeans. And finally, if this explanation in one or more cases was a native one, we note again that it must be considered a reinterpretation or rationalization of a custom of forgotten origins since in the early stages of the development of the chiefship among a sibless people or a people with the father-sib, when chiefship was not hereditary, the question of the nobility of the blood of the son of a chief would never

whole of the associated ceremonial complex also strongly suggesting Tsimshian influence—retained the Tsimshian words of the songs and sang them without understanding them; finally they forgot the origin of these songs in a strange language—or the Carrier community consulted had borrowed them from other Carriers without knowing their Tsimshian origin—and Father Morice was informed by the natives that the language of the songs was the ancient language of the Carriers! (Vide Morice, op. cit., 1892.)

²³ Ellis, A. B.: “The Tshi-Speaking Peoples.” London, 1887, p. 330. Loango and other African cultures offer comparable phenomena.

²⁴ Penn, Wm.: “Letter to the Free Society of Traders,” in *Narratives of Early Pennsylvania*, ed. by A. C. Meyers.

²⁵ Cited in Speck, F. G.: “The Social Structure of the Northern Algonkian,” *Publications of the American Sociological Society*, 1917, p. 92, n. 3. Dr. Speck informs

arise; and when the chiefship had at last become more or less definitely hereditary the commoners would hardly question the fidelity of the royal women. If, for any reason, the nobility themselves questioned it they could certainly insure the purity of their breed by cloistering their women or by some means²⁶ other than a revolutionary revision of the direction of inheritance. In a culture embracing the mother-sib such an explanation would hardly be called forth inasmuch as the usual matrilineal kinship reckoning of the mother-sib already furnishes the rationale for the matrilineal reckoning of the chiefship.²⁷

Returning to the influence of the mother-sib concepts on the inheritance of chiefship we must now observe that *the institution*

me that to judge from linguistic evidence Le Jeune's notes were possibly mixed before transcription and that it was not the Montagnais, today a sibless people, to whom reference was intended. (Cf. Le Jeune, "Jesuit Relations," vol. 6, p. 255.)

²⁶ Barbot, op. cit., p. 476, speaking of the method used by the kings of Loango—and the children of the Loango kings were not to inherit because of the matrilineal reckoning!—says that when one of their wives "proves with child some man must drink *Bonde* with her to know whether she has had to do with any other than the king. If the man who has so drunk be well they judge the woman upright; but if the man falls, she is condemned, and burnt, and the adulterer buried alive." A selected group of the wives of the Baganda king were kept under strict guard (Roscoe, op. cit., 1911), and the commoner *husband* (!) of any royal woman of Loango was immured under guard and not permitted even to look at a woman other than his noble spouse on pain of death. (Proyart, L'Abbe: "History of the Kingdoms of Kongo, Kakongo, Loango, etc." (circa 1776), in Pinkerton's "Voyages and Travels," v. 16, London, 1814, p. 570).

²⁷ Other cases reported by travellers of the attribution of matrilineal chiefship to this looseness of the women, at which the Europeans affected to be shocked, are to be found in Barbot, op. cit., p. 55, for the natives of the Senegambia region; Bossu on the Alibamu, cited in Westermarck, E.: "The History of Human Marriage," 5th ed., London, 1921, v. 1, pp. 284-285; and in Baldaeus, P.: "Malabar and Coromandel Coasts, and Ceylon," p. 625, in Churchill's Travels, op. cit. (circa 1672), where Baldaeus reports it generally for Sammonyn and "most other" kingdoms "along the coast of Malabar."

In Barbot, op. cit., p. 248, is a remarkable reference in connection with this explanation. Speaking of the Gold Coast kingdom of Acra he says, "It is supposed the Blacks in this particular follow the maxim of some Eastern nations of the Indies [East or West?] which *adopt* their sister's children to inherit their dignity and effects; because they cannot question such, being of their own blood; whereas they can have no positive certainty that their own wives have not committed adultery at one time or another and borne children of a strange blood. . . ." I presume Barbot was reporting incorrectly? . . . The Gold Coast data as reported by him, however, can hardly be explained away by the reporter's "supposed."

of hereditary chiefship, and of the sib whether of independent or imitative development, cannot be thought of as always, or even generally, developing concurrently in a culture. The Coast Salish for example have no form of the sib but have both band and tribal chiefships, both strictly hereditary partrilineally through primogeniture; and many bands of the Ottawa River Algonkian have already acquired the father-sib but have not evolved hereditary chiefship and have no chiefship of any kind other than that of the band. What, then, could we expect in the case of any specific group where the chiefship has become definitely inheritable patrilineally before the evolution or diffusion of the mother-sib? It seems improbable that the aristocracy of the group would yield the already established scheme for the inheritance of their previously acquired prerogatives. The newly evolving or diffused concepts making for the organization of mother-sibs would develop only in so far as they did not encroach on the privileges belonging to those who were powerful or influential; they would approach fixed institutions not as a powerful surge of sanctioned ideas, but as new ideas offering themselves timidly as candidates for assimilation to, and for the enrichment of, the social pattern already established by the group, *and the result would be the contrast within the same culture of a patrilineal chiefship and the matrilineal sib.* So much is indeed conjectural, but some meagre data from the field seems to bear it out—for example, that from those Australian tribes which have at the same time the patrilineal chiefship and the mother-sib.²⁸ In the case of the royal family of Dahomey, royal blood and kingship are patrilineal in contrast with the matrilineal reckoning of the other Ewe tribes or kingdoms and, particularly, the matrilineal reckoning of kingship in the related kingdom of Porto Novo, and among the commoners of Dahomey. The facts of the more or less authentic history of Dahomey, and the nature of Dahomean autocracy in contrast with that of the more democratically governed neighbor tribes, the existence of matrilineal reckoning of kingship in Porto Novo,

²⁸ Vide Howitt, A. W.: "The Native Tribes of Southeast Australia," London, 1904, p. 295 seq.

which, it seems, was formerly a part of the Dahomean kingdom and ruled since its separation by a branch of the same royal family, along with the other less prominent facts of the culture of Dahomey and the Ewe peoples generally,²⁹ it seems to me argue very convincingly towards the conclusion *that within recent centuries Dahomean royalty has undertaken a change from a matrilineal to a patrilineal condition*. The Australians mentioned (and the Chitimachans)³⁰ may not then exemplify the possibility outlined, but I believe it to be more probable that they do, than that a change has taken place in the reckoning of the chiefship; although the councils of the Australian headmen had considerable power or influence in devising innovations in the course of their secret council meetings, they were not in the powerful position of the rulers of the great African states, and presumably, if aggrandizement of their own children rather than those of their sisters had been their wish, would have resorted to some of the ingenious devices of which they were intellectually capable and which other peoples resorted to, rather than fly in the face of their ancient institutions.³¹

For those cultures which offer us *the fact of matrilineal chiefship without the mother-sib*, we have, then, in view of the foregoing, only three possibilities left in seeking the cause; first, the superposition of a people with a matrilineal chiefship upon a people without the same, either through a forcible conquest or through some peaceable accommodation; second, the persistence of a matrilineal chiefship after the disappearance or decay of the mother-sib; third,

²⁹ Cf. Ellis, A. B.: "The Ewe-Speaking Peoples," London, 1890, pp. 177, 208, 212, 216, 204, 162 seq.; Dalzel, A.: "The History of Dahomey," London, 1793; Encyclopedia Britannica, 10th ed., article "Dahomey."

³⁰ The Chitimachan neighbors of the Natchez seem to have been characterized by this contrast also (and among them chieftainesses are reported). Vide Swanton, op. cit., 1911, p. 349 seq.

³¹ Intertribal intermarriage arrangements between mother-sib and father-sib tribes in Australia are remarkably ingenious, ending in the surmounting of a difficult situation without infringement of tribal custom. Chiefs' families of many Australian tribes intermarried as did those of the Tsimshian, resulting in mother-sib tribes in inheritance of privileges by children and grandchildren. Cf. supra, p. 503.

imitation of the institution of matrilineal chiefship without also a concurrent imitation of the mother-sib, by a people possessing either the father-sib or no sib at all. The third possibility may never be substantiated in fact; it is, indeed, hardly to be admitted as a possibility at all in view of the primal tendency toward patrilineal descent of the chiefship when the evolving office is not culturally environed by the mother-sib.³² Therefore, in general, *the problems offered by the cultures under consideration will resolve themselves into a question of superposition or decay of the mother-sib.* It may be well for us to consider an illustrative example or two.

In the case of the Baganda the evidence seems to point rather definitely to superposition, possibly as the result of conquest.

The Baganda people are, first of all, made up of some forty-one patrilineal sibs. The royal family excepted, children are members of their father's clan (patrilineal sib); they must marry outside of this clan (the father's and their own), and further, are forbidden to marry into their mother's clan. Members of clans into which they may not marry are considered the same as blood-kin of the degrees of relationship between which marriage is forbidden aside from sib regulations. But while there are these relationships between which marriage is forbidden, the exceedingly close blood relatives, brother and sister, are permitted to marry each other! And the Lung Fish clan is permitted to marry within their clan, while in the case of two very large clans marriage into

³² A possible instance, supported by historical data, of the evolution of a new office under foreign influence, the office acquiring a foreign type of inheritance reckoning, contrasting with the indigenous type of reckoning, is instanced in some data concerning the Iroquois sachem Shekallimy. Circa 1728 the Iroquois Confederacy appointed this Oneida sachem as their representative among the Shawnee who had settled in Pennsylvania; Shekallimy was at the same time useful to Weiser and the provincial government of Pennsylvania, and it is possible that the sachem was sent in charge of the Shawnee on the request of Weiser and his superiors (Information on this point does not appear in the published records, to my knowledge). At any rate it would seem that the growing Iroquoian imperialism was evolving a new office. European influence, it appears, was on the way to direct it towards a patrilineal inheritance, for Weiser upon Shekallimy's death asked this sachem's eldest son to act in his father's place, stating that upon his (Weiser's) next visit to the Confederacy councils he would have the son made the successor of his father. (Vide Pennsylvania Colonial Records, v. 3, p. 403, council of Aug. 12, 1731, Pennsylvania Archives, v. 1, p. 772 (1747).)

the father's clan is permitted.³³ In childhood a person is "brought up" to "respect and avoid" the eponymous animal and other totems of the mother's clan; but when a child "grows up" it "adopts" its father's totems. In the ceremonies following childbirth the maternal and the paternal grandfathers both play important parts. With royalty a child is given the name generally of a paternal grandparent; with commoners the name given is merely that of some illustrious ancestor. A man's sister's son terminates the mourning ceremonies following the man's death.³⁴

The kingship is patrilineal, passing from the king to some one of his sons; if the son chosen is too young to rule a brother will reign, but on the death of this brother a grandson of the former king will be chosen to succeed. The reigning king has the privilege of indicating which eligible son shall succeed, but his choice can be set aside after his death by the three officials who are the electors, while their choice even may not reign inasmuch as the selected son may be killed in formal combat, after his nomination, by another son.³⁵

But although kingship is thus definitely patrilineal there are for royalty provisions suggesting a former matrilineal reckoning. Anciently the king took but three wives; even today, with unrestricted polygamy, the "King's Mother" appoints three

³³ Roscoe, J.: *op. cit.*, 1911, pp. 63, 83, 270. Cf. Roscoe, *op. cit.*, 1902. E. Sidney Hartland in his observations on the Baganda in "Matrilineal Kinship and the Question of its Priority," *Memoirs of the American Anthropological Association*, v. iv, pt. 1, 1917, states that Roscoe has not stated that a person must marry outside his own clan. Roscoe in his 1911 volume has failed to state this explicitly, but in his 1902 notes he has done so, and it is definitely implied in the 1911 data. (Cf. Roscoe, 1902, p. 35, and 1911, p. 128.) Roscoe's statement that with two clans marriage into the father's clan was permitted is not clear. Apparently the so-called Lung Fish clan was an association of two distinct sibs. (Vide Roscoe, 1902, p. 35; 1911, pp. 63, 27-28.)

³⁴ In the matter of the change of totems—presumably about the time of puberty—Roscoe is far from clear and we trust that the real facts will be uncovered. Hartland sees in this good evidence for a past change from a matrilineal to a patrilineal reckoning of inheritance of sib membership, but it may mean merely that a child became a clan member only upon the attainment of maturity, meantime being considered as especially related to its mother and taught to respect things associated with her. (Vide Roscoe, 1911, pp. 63, 128, 270.)

³⁵ Roscoe, 1911, pp. 189, 220 seq., 232; 1902, p. 44.

principal wives for the king.³⁶ Today the king marries numerous wives, most of them generally being non-royal women from various clans. *The children of the king belong to the clans of their respective mothers*³⁷ and certain remarkable provisions are made concerning the women of royal blood. *They are forbidden to marry, and are forbidden on pain of death to give birth to children.* Anciently, before the custom of killing the king's brothers was introduced³⁸ these women were permitted to bear male children, which, however, were strangled (which means, I presume, that the death penalty in those days would not be imposed for the birth of a *male* child). The king might marry women of royal blood (under present Baganda conditions these are only his sisters and half-sisters) but was not "expected" to have children by them.³⁹ Upon the election of the king a sister or half-sister of the new king was chosen by the electoral committee to be the ranking "King's Sister," the princess holding this position under the deceased king assisting in the choice of her successor. The new king's mother takes the place of the old; or some other royal woman not the mother of the king might be chosen to fill officially the place of the King's Mother.⁴⁰ The women officially acting as the King's Mother and ranking King's Sister were forbidden marriage or childbirth (the King's Sister of course as a woman of royal blood before her ascension even to her high official position would have been under this restriction, but the King's Mother is not necessarily a woman of royal birth). They might, however, have promiscuous intercourse.⁴¹ It will be seen, then, that here is suggested a former matrilineal chiefship which has been interfered with by some enactment forbidding the birth of any heir to the

³⁶ Roscoe, 1902, p. 67; 1911, pp. 189, 187, 86.

³⁷ Roscoe, 1911, p. 128.

³⁸ Vide, *supra*, p. 514.

³⁹ Roscoe, 1911, pp. 232, 187, 84, 81.

⁴⁰ Roscoe, 1911, p. 191; 1902, p. 62. Presumably another than the king's own mother may fill the office of King's Mother in case of the death of the latter, or in case a brother of the deceased king by the same mother should succeed. The "King's Mother" of a deceased monarch had important religious duties to attend to after the death of the king and could not succeed herself. (Cf. comparative notes for other Bantu in Barbot, *op. cit.*, pp. 368, 476, 480.)

⁴¹ Roscoe, 1902, p. 36.

throne in the matrilineal line, the effect of which enactment apparently having been to open the way, legally or otherwise, to inheritance of the throne by a son of the king. The whole thing suggests a revolutionary order by some despotic monarch—and in this connection we must recall the Dahomey problem.⁴² Perhaps at the time of the change the inheritance provisions of the Baganda were like those of Loango (matrilineal) where it is provided, in the case of property at least, that, failing the regular matrilineal heirs, a brother by the same mother, first, then a sister's son, then some relative of the mother might inherit his property.⁴³ The hypothetical but very probable revolutionary change which it seems was made concerning the royal women we may imagine was accompanied by wholesale murders, like those which have in the historical period marked the introduction of comparable innovations in Baganda customary law. The Baganda kings, for example, have always feared usurpation of the throne, and frequent revolts by rivals have justified that fear.⁴⁴ Therefore, as recently as six generations since, the king Semakokiro, as soon as he had several sons born to him, permitted his Mother to order the treacherous burning to death of all his brothers and half-brothers save three. (It was forbidden to spill royal blood, even by the king or upon his orders, but fire and starvation could be legally employed.) The burning and starving of each new king's numerous brothers was then followed as a regular custom down to the time of King Mutesa, two generations ago, when Mutesa, under Christian influence, abolished it.⁴⁵ Furthermore the whole

⁴² Vide *supra*, p. 510.

⁴³ Vide Dennett, R. E.: "At the Back of the Black Man's Mind," London, 1906, p. 46. With these Bavili of Loango moreover a man might cheat his regular heirs by giving in his lifetime all his property to his sons, or to his slaves, leaving only his debts, which debts the regular heirs were obliged to assume as that part of the inheritance which is left them! Dennett indicates that this giving away is done only when a man is angry at his heir apparent. The giving away of property to one's sons, thus cheating the regular matrilineal heir, is mentioned also by Barbot for the Gold Coast people of his day. Cf. p. 519

⁴⁴ Cf. Roscoe, 1911, p. 226. King Kamanya even killed some of his sons from fear of possible usurpation on the part of one of them.

⁴⁵ Roscoe, 1911, pp. 188, 225 seq. At this point it is illuminating to consider the

fabric of the Baganda state indicates that it has been submitted to one or more radical reorganizations on the part of the administrative power. The clans are, for example, overlaid with an administrative pattern of ten districts which results in the cutting up of clans among districts. These ten districts are again divided and subdivided and the officials of each district and subdivision are commoners appointed by the king and may be deposed at his will; while he is inclined to make these positions continuous in the family of the official, and virtually hereditary, he is not at all obliged to do so. Beneath the administrative pattern of the superimposed reorganization, as we have said, are the clan organizations. Each clan has its chief, and each clan is divided into branches with as many subordinate chiefs. Each clan has its local burying ground however scattered may be its members, and this serves also as a species of "city of refuge" for any of its members and their cattle who may find it necessary to flee from the wrath of the king, these burial grounds being the property of individual clans; whereas all other land is the king's. Clan chiefs, in contrast to district chiefs, are chosen by the clan.⁴⁶

perturbation of Natchez royalty when they too desired to change to endogamous caste practices, under the immediate influence of French culture, but no doubt also having in mind the example set by their "friends" the Chitimacha, whose nobility was not only patrilineal but endogamous as to caste. The Sun Woman or king's mother or sister—which, at this date, cannot be determined—informed Du Pratz that she and her royal brothers—the king, Great War Chief, etc.—desired that Natchez custom should be changed to the endogamy mentioned in order primarily that the children of the male royalty should thereby also be royal, since under the matrilineal reckoning of the Natchez these children could not inherit the father's rank. To manage this, other closely interwoven customs of rich psychic content would have to undergo revision, and the Sun Woman intimated that certain powerful groups in the community would object—the group known as Nobles, about whom we know little. The men of the royal family she said lacked the courage necessary to defy convention much as they desired the change. Therefore the only solution she could think of under the circumstances was that Du Pratz should marry her daughter, intimating that his position in the tribe along with the backing of the French would enable him to be the means of making the desired changes—which changes in fact it would be necessary for him to effect if his own children were then to inherit the dignity of his royal wife. Vide *Le Page du Pratz*, op. cit., v. 2, p. 351 seq.

⁴⁶ Cf. Roscoe, 1911, pp. 19, 27-28. At least some of the clans were, and perhaps still are, it seems, local groups. But the fact remains that the district organization and its officialdom is in the nature of a superimposition upon the clan organization and its officialdom.

Evidently the Baganda royalty were at one time matrilineal, although it would seem that this time was very many centuries back, because the kings offer us a patrilineal reckoning for their office to their traditional ancestor thirty-two generations (approximately one thousand years) ago.⁴⁷ By reason of this last mentioned fact it may be suggested that the superposition which may be responsible for the one-time matrilineal royalty of the Baganda must be referred to the remotest antiquity and not to the period of the traditional ancestor of the kings, who might be considered the product of a second conquest which resulted in the revision of the inheritance ruling.⁴⁸

Do the Baganda afford us an example of a people who anciently within the same culture adhered to both the father-sib and the matrilineal chiefship? An answer one way or the other is important in its bearing on data from other great cultures, particularly the kingdoms of Kongo, Kakongo, and Loango.

Hartland, consistently interpreting every fact suggesting relationship of a person with the mother's family as a vestige of a former "mother-right"⁴⁹ feels that it is necessary in view of the

⁴⁷ There is yet another phase of the problem of perhaps minor import. At present the princes and princesses—the royalty—of the Baganda are only the sons and daughters of the (male) kings. This inheritance of royal blood from a male parent is in flat contradiction of a matrilineal reckoning. I feel confident, however, that an investigation in the field will indicate that the three wives anciently taken by the king were royal women, and probably that the three principal wives today trace their royal blood back to the female side of the royal family and so through the female side of the house endow with a matrilineally royal inheritance those children which they bear the king. The custom of considering royal *all* the children of the king—if this is really done—may well have come about through a growing disregard for the ancient limitations of matrilineal inheritance. (Cf. Roscoe, 1902, p. 67; 1911, pp. 83-85, 86, 189, 187.)

⁴⁸ The question of influences from Semitic culture becomes of interest in connection with all the above.

⁴⁹ The subject of such "vestiges" is brilliantly handled by Dr. Lowie in his volume "Primitive Society," already referred to. The so-called vestiges appear to be frequently new growths and not vestigial at all. There is something which remains to be added, however, concerning the methodology which Hartland and his school follow. Is it not remarkable and apparently rather *improbable*, given the multitude of cultures in this very young world of human culture, that everywhere the mother sib should be found to have become transmuted, to have died, or to have decayed, leaving only vestiges, or not even those, and yet be nowhere found in a condition of *incompleted evolution*? This of course does not call first for explanation but for proof.

data we have already digested and in view of other less salient details not here considered to conclude that the Baganda people were once organized into mother- rather than father-sibs, the present patrilineal reckoning of sib membership being altered from it. Dr. Hartland's thesis is heavily ballasted by reference to the rather clear evidence for a former matrilineal reckoning of the kingship. The line of thought I have already developed in the earlier sections of this paper concerning the origin of matrilineal chiefship would require the same conclusions *if the Baganda royalty are a caste evolved from the Baganda people*.

But we cannot conclude that this condition is met. On the contrary there is some good evidence in the Baganda data itself apart from a consideration of comparative data to suggest that their aristocracy is the product of the superposition of a matrilineal group upon the original Baganda population.⁵⁰ Before the ravages of historic plagues the Baganda numbered probably some three million people. They hold several lesser states tributary. There is the sharp distinction between district and clan organization. Baganda clan myths and tribal myth point definitely to an historical welding of disparate groups around an intrusive group as a dynamic agent.⁵¹ Further, there is the well-authenticated fact that such superposition has been a phenomenon frequent

⁵⁰ The nature of the complete social organization of the superimposed group remains a question for separate consideration.

⁵¹ Cf. Roscoe, 1902, pp. 27-28; 1911, 27-28, 19, 63, 128, 137, 164. Roscoe himself suggests a conquest at the time the royal genealogy begins. He does not go into the question of the various cultural mutations aside from this suggestion. He bases his thought in large part upon the physiological differences between the royal family and the people, and cultural variations as well as physiological differences between the elements of the various clans, evidence I consider valueless as it stands; the differences mentioned are not recorded amply enough to be of use to us, and might be tentatively interpreted as the product, in the case of royalty, of sexual selection, and, in the case of the clans, of interbreeding with captives and of mixture with bordering peoples. Observations of wood-carvings portraying human figures, by west coast tribes of Kongo, Loango, etc., suggest conquest in this region, but although I am inclined to agree with Dr. Hall's conclusions, in favor of conquest here, as with Roscoe's for the Baganda, I feel that the thesis must be supported with the evidence of social organization, becoming conclusive only when actual historical evidence of record is available. (Cf. Hall, H. U.: "Congo and West African Wood-Carvings," Museum Journal, University of Pennsylvania, March, 1923, p. 61.)

in African culture history.⁵² Comparative data lend some support to the suggestion of superposition in the case of the Baganda.⁵³ The conclusion therefore of a primitive "mother right" for the indigenous Uganda tribes is not warranted. It seems to me a much more justified suggestion that the superposition referred to has taken place, and that the original tribes of Uganda were evolving their social organization out of a primitive bilateral reckoning somewhat in the direction of the remarkable Herrero with their curious two-type sib organization. The mother-sib features indeed might have been in part a radiation of influence from the matrilineal conquerors; and on the other hand the matrilineal conquerors might have been impelled to a change toward the patrilineal innovation for the chiefship by the example of a patrilineal chiefship of the subjected peoples.⁵⁴ One might see something of an earlier "stage" of such evolution among the Bavili of Loango who have a matrilineal royalty, but have neither father-nor mother-sib. With them the basis of the social organization is the Xifumba, interpretable as a bilateral family to which the concepts of unilateral reckoning and exogamy are being assimilated—conceivably, in part as the result of influences coming down from the royal caste,⁵⁵ through independent development, and from imitation of peoples historically contiguous. An Xifumba includes the two parents and the four grandparents of ego, and all ego's children including his great-grandchildren, and himself and his wife. Each Xifumba has its head or "chief" who is called its Kongo Zovo, and who is subordinate directly to the administrator of that province of the kingdom the Xifumba is resident in, this administrator being in turn responsible to the royal administration. Each Xifumba has its own Xina, which is of the nature of a "totem" but involves only taboos (Xina signifies prohibition) and is not eponymous or ancestral. Different Xifumbas may happen to have the same Xinas. When a native is asked to what Xifumba

⁵² Cf. Lowie, R. H.: "The Origin of the State," *Freeman's Journal*, July, 1922.

⁵³ Cf. *supra.*, p. 519.

⁵⁴ Cf. *supra.*, p. 518, n. 55

⁵⁵ Cf. *supra.*, p. 518, n. 54. That is, a similar internal diffusion took place in both the Baganda and Loango states.

he belongs he will state that he belongs to his mother's; and he may not marry into his mother's Xifumba nor into any Xifumba which has the same Xina as his mother's. He may marry children of his father's sisters but may not marry children of his father's brothers.⁵⁶ Inheritance of property is matrilineal, though the son may inherit if there are no heirs in the matrilineal line.⁵⁷ There is no mention of chiefs other than the heads of the Xifumba (who are not chiefs in the political or semi-political sense to which we have limited the use of the term). Now the data from Loango, Kakongo, and Kongo, along with comparable data, concerning which the possibilities of diffusion must be taken into account, from Benin, Uganda, Ashanti, Dahomey, the Yorubans, etc., Negro and Bantu alike—the volume and intricacies of which, however, call for consideration in a separate treatise rather than here⁵⁸—lend support to the hypothesis that with the people of Loango also we are dealing, *not with the mother-sib in decay, but with a mother-sib or dual-sib type of organization in course of evolution, and a superimposed matrilineal aristocracy.*

The problematical Lenape are deserving of a note by way of appendix to this paper, inasmuch as they would seem to offer something of the always elusive "historical" evidence illustrative of the stages in the evolution of a determinately matrilineal chiefship out of a non-hereditary chiefship under the influence both of their own mother-sib and of cultural influences bearing on the chiefship radiating from a neighboring people of superior culture.

The Delawares (Lenape and Munsee) and Mahickans, as new data is brought to bear upon them as a cultural problem, offer us an instructive comparison when set over against their neighbors,

⁵⁶ Cf. Dennett, R. E., op. cit., pp. 35, 52, 154.

⁵⁷ Vide supra, p. 514.

⁵⁸ The author is presenting this data in a separate paper. Besides writings already cited above the reader may consult the "Adventures of Andrew Battell," (circa 1590) in Pinkerton's *Voyages and Travels*, v. 16, pp. 317-336. (Battell was for eight years a prisoner of the Portuguese in Angola.) Also the writings of Pechuel-Loesche, E.: "Volkskunde von Loango," Stuttgart, 1907; "Indiscretos aus Loango," *Zeitschrift für Ethnologie*, v. 10, 1878, pp. 17-33; and Bastian, A.: "Zum Westafrikanischen Fetischdienst," *Zeitschrift für Ethnologie*, v. 6, 1874, pp. 1-20, 80-98.

the Iroquoian tribes of Pennsylvania and New York. The Mahickans and the Delawares, at least as early as the middle of the eighteenth century, were organized tribally, when compared with each other, on very much the same basis even as to details, socially and politically.⁵⁹ In contrast to the Iroquois they were, as late, or as early, as the middle of the seventeenth century still basically aggregations of families, each family possessing its private hunting grounds.⁶⁰ Information as to the existence of the mother-sib organization is not to be had earlier than that afforded us by the Moravian missionaries of the middle of the eighteenth century, but it is significant that Mahickan, Munsee, and Lenape are each reported as divided into three phratric groupings—Wolf, Turtle, and Turkey. (Barton gave the Mahickan phratries as the Wolf, Turtle, and Bear, the same as the tripartite division of the Mohawk and Oneida.) The Mohawk and Oneida were likewise divided into three exogamous groups.⁶¹ The Mohawk sibs moreover were local groups as well, and there is some reason for believing that all the sibs of the Five Nations were at one time local groups. The names of the subdivisions of the tripartite phratric divisions of the Algonkian tribes under consideration suggest that they too were evolved from local groups; and there might be considered the possibility that the appellations of the three phratric divisions of the Delawares were also the appellations of the three great territorial divisions of the people. (This would seem to be the solution of the Morgan-Brinton difference and is suggested in a measure by the names given in the *Walam Olum* in connection with the fact noted conclusively by Harrington that at the present day the names in question are the names of phratries and not of

⁵⁹ Vide Ruttenber and Ettwein, and articles on the respective tribes in the "Handbook of the North American Indians" already cited.

⁶⁰ Vide MacLeod, W. C.: "The Family Hunting Territory and Lenape Political Organization," *American Anthropologist*, v. 24, 1922. For the Mahickans see the various land sales recorded, in "The Rennsalaer Papers," pp. 35, 182, 307, and especially, p. 166.

⁶¹ Vide the Handbook, op. cit.

territorial divisions.)⁶² There is much in these facts and the data of Iroquois culture to suggest that the Mohawk and the Oneida were the first tribes to displace the Algonkian aborigines of New York, and that as a result of contact with these earlier invaders a group of Algonkian ancestral to the present Delawares and Mahickans (and possibly to the Conoys and Nanticoke) became organized on a tripartite sib pattern. The distinction of institutionalized peace and war chieftaincies is clearly a result of contact with the Iroquois as is much else in the political organization of these Algonkian. In view, however, of the absence of any evidence for the existence of a sib organization for the Delaware, etc., before the Moravian period or before William Penn's note regarding the matrilineal inheritance of the band chiefship among the Indians of the Philadelphia region—which note of Penn's in view of the following information may really have reference to the Iroquois—it is conceivable that Mohawk influence, in particular within the historic period, perhaps as late as the eighteenth century is responsible for the social pattern the Moravians describe. In such case we would expect the influences in question to reach some Algonkian bands sooner than others—and indeed, Penn's note being accepted as reliable, that is what the following observation may indicate.

Thomas Budd, who arrived in Burlington, New Jersey, in 1678, writes in 1685 of his observations in the Burlington region.⁶³ He tells of “the dying words” of the “king” Ockanickon, “which I writ from his mouth,” through the well-known and reliable interpreter, Falkinberry, words “spoken to Iackhursoe, whom he appointed king after him, spoken in the presence of several who were eye and ear witnesses of the truth thereof.” Ockanickon says to his brother's son, this Iackhursoe, that “whereas Swanpees and Schoppy [probably Schoppe or Schoppen] were appointed

⁶² Cf. Brinton, D. G.: “The Lenape and Their Legends, With the Complete Text and Symbols of the Walam Olum,” v. 5 of the Library of Aboriginal American Literature, Phila., 1885, p. 215. Also Harrington, M. R.: “A Preliminary Sketch of Lenape Culture,” *American Anthropologist*, v. 15, 1913.

⁶³ Budd, T.: “Good Order Established in Pennsylvania and New Jersey,” 1685; reprinted, New York, 1865.

kings by me in my stead, and I, understanding by my doctor hat Schoppy secretly advised him not to cure me, and they both being with me at John Hollinshed's house, there I myself see by them that they are given more to drink than to take notice of my last words, for I had a mind to make a speech to them, and to my brethren the English Commissioners, therefore I refused them to be kings after me in my stead and have chosen my brother's son Iakhursoe in their stead to succeed me." It would be well could we know more of the relationship between Ockanickon, Swanpees, and Schoppe, but, although evidence on this point does not appear to be available in the archives, we may depend on Falkinberry for the relationship of Iakhursoe. Why two successors were thought of at first and only one appointed subsequently is puzzling. There is perhaps a connection with the fact that in Ettwein's day each phratric chief had an assistant who assumed the office when the chief was away on business or on the hunt. So too the Ottawa Valley Algonkian have a vice chief;⁶⁴ and both this and the institution noted by Ettwein would appear to be a product of *adaptation of the Iroquois institution of the assistant sachemship*. Concerning the appointive power of Ockanickon we note that Ettwein reports in 1788 that the retiring phratric chief generally appoints a "candidate" for the succession within his own lifetime; Harrington reports for the modern Delawares merely that a phratric chief is succeeded by "the nearest male relative" of the old chief, the office being considered hereditary—I presume, matrilineally.⁶⁵

⁶⁴ Vide Speck, op. cit., 1915.

⁶⁵ Ockanickon, Swanpees, and Schoppe appear as signatories to sales of aggregated hunting territories on both the Pennsylvania and the New Jersey sides of the Delaware River. While Ockanickon was evidently head of a family and the holder of a family hunting territory, he appears also with one Metapis to have been a principal chief in the region from Burlington up to the Falls. He may have been a band chief, and may also have held some higher chiefship such as that of a phratry, but exactly how high his office was archival materials now available do not help us to conclude. The data of the land deeds and such records indicate rather clearly that his band was the descendant of the ancient Mattinekonk band, which would seem, probably through intermarriage, general decimation by disease of the river Indians and consequent inheritance perhaps by one family of territories in more than one band area, to have had filiations with the ancient Atsayonk band below Burlington and the ancient Soëpassinks and Penikpacka bands (Neshaminink band) on the west side of the river.

CONCLUSIONS

1. The chiefship is universally the prerogative of an adult male. An *ad interim* exercise of the functions of the office by an immature male, or by a woman, or by a son-in-law of a former incumbent of the office is of the same category of facts, is found only as an irregular phenomenon, and then only among peoples with whom the chiefship is definitely hereditary, the son-in-law inheritance appearing only where the inheritance is definitely conceived of as descending regularly from father to son, as is the case among the southern Kwakiutl.

2. Matrilineal chiefship is generally or typically correlated culturally with the mother-sib. There is a primal psychic urge tending universally towards the evolution of patrilineal chiefship; this finds its expression with peoples among whom the father-sib obtained or who have had no sib organization, but is inhibited among those peoples where the mother-sib has obtained antecedently to, or concurrently with, the evolution of hereditary chiefship, the evolving or evolved mother-sib, exerting influences which result in a matrilineal chiefship. As historical data illustrating the evolution of matrilineal chiefship, information on the Lenape chiefship is of significance. The interpretation of matrilineal chiefship as caused by the uncertainty of paternity is considered, and rejected as being merely a rationalization of ancient custom.

3. But the mother-sib and hereditary chiefship do not always evolve concurrently, nor does the mother-sib either through independent or imitative development always precede that of the hereditary chiefship. Where chiefship is hereditary patrilineally before the evolution of the mother-sib the result is a correlation of the mother-sib and the patrilineal chiefship—a condition probably exemplified by some Australian and by the Chitimachan data, but not exemplified by the Dahomeans with whom the kingship was probably formerly matrilineal.

4. In those atypical cases where matrilineal chiefship is correlated with the father-sib or with no sib organization, the problem is reduced to a question of the former presence of the mother-sib,

or the superposition of an alien people and their culture. The Baganda are considered (with reference to Natchez and Loango data) and appear to exemplify the superposition alternative, and the indigenous social organization of Uganda and Loango would seem to present an example of incompleting evolution of mother-sibs.

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ANTHROPOMORPHIC CARVINGS FROM THE GREATER ANTILLES

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IT is earnestly to be hoped that the absence of monumental remains and the backward state of stone sculpture within the West Indian archaeological area will not operate to discourage anthropologists from continuing intensive studies in this region. Especially to the advocates of the American School, interested at heart in the dynamic aspect of cultural phenomena, this field should prove fruitful and interesting, as it presents an absorbing problem of diffusion, acculturation (notably in the Lesser Antilles), and specialization of culture of the kind found throughout tropical America.

Stone objects of the region bearing anthropomorphic elements may be classified as follows: (a) frontal and pectoral amulets, (b) engraved celts and "dirks," (c) pestles, (d) disks and masks, (e) massive human heads, (f) three-pointed idols, (g) elbow-stones, (h) stone collars, (i) idols embodying the entire human form, (j) pillar stones from ceremonial sites, (k) pictographs, (l) other objects (unclassified).

The largest of these objects, the pillar stones, do not generally exceed 5 or 6 feet in height; the smallest, amulets, may have a minimum length of half an inch. As a rule the stones carved in the shape of a human head vary in size from 3 to 8 inches.

PLACE OF THE CARVINGS IN THE CULTURAL LEVELS OF AMERICA¹

The theory of the peopling of the West Indies by a slow process of filtration on the part of certain tribes of Arawak stock originally dwelling in the littoral region between the deltas of the Amazon and the Orinoco, has been found by several investigators

¹ The author takes pleasure in acknowledging his indebtedness to Dr. Herbert J. Spinden for some kind suggestions regarding the matters dealt with in this section.

well supported by facts concerning the ethnology, archaeology, geography, biology, and hydrography of the adjacent regions of the Continent and the Archipelago.²

Archaeological evidence of an antecedent culture has, to the present, been found only in Cuba,³ where the Ciboney preceded the Tainan Arawak. Some features of the material culture of this race, especially its shell industry, as well as certain geographic relations, seem to connect the Ciboney with some tribes of the southeastern United States, particularly those of the peninsula of Florida.

It may be assumed that long isolation of the South American Arawaks in the several islands of the chain was one of the principal factors of differentiation. These processes were more active in the more distant islands—Cuba, Haiti, and Porto Rico—and their effects diminish as the distance to northeastern South America decreases. Trinidad, as well as certain islands of the Windward group, retained certain specific features of South American type.⁴ The elbow-stones and the three-pointed idols—so far unique art-forms in the prehistoric horizon of the world—lead one to think that specialized forms of culture, dependent to a great extent on the growth of agriculture and the influence of its affiliated ideas on the philosophy of nature, had been developed along strange paths of evolution in aboriginal Haiti and Porto Rico. The enigmatic aspect of these remains can be approached only by bearing in mind the inextricable interrelation of religion and magic at certain moments in the evolution of primitive thought.

There are other reasons for believing that cultural germs and

² Fewkes: "Relations of Aboriginal Culture and Environment in the Lesser Antilles," *Bull. Am. Geogr. Soc.*, vol. XLVI, no. 9, 1914.; Joyce: "Central American and West Indian Archaeology," p. 157 et seq.; A. de Hostos: "Notes on the Hydrography of the West Indies in its Relation to Prehistoric Migrations," *Contribution to the Twentieth Int. Congress of Americanists*, Rio de Janeiro, 1922.

³ Harrington, M. R.: "Cuba Before Columbus," pt. 1, vol. II, *Indian Notes and Monographs*, Mus. of the Am. Indian, Heye Foundation, N. Y., 1921.

⁴ Fewkes: "Prehistoric Objects from a Shell Heap at Erin Bay, Trinidad," *Contr. Mus. Am. Indian*, Heye Foundation, no. 7; De Booy: "Certain Archaeological Investigations in Trinidad, British West Indies," *Contr. Mus. Am. Indian*, Heye Foundation, vol. IV, no. 2.

traits brought to the islands by the Arawaks had been diffused from a culture which originated in the humid lowlands of eastern South America. A knowledge of rudimentary agriculture, pottery-making, and weaving were the principal achievements of this culture. In eastern South America it has been aptly characterized as the cassava complex.

As far as the particular subject of sculpture is concerned, it may be observed, to begin with, that in the Greater Antilles the majority of the anthropomorphic carvings do possess that quality of "being archaic in an absolute sense" which Dr. Spinden has found in the remains of the archaic period from Mexico and Central America.⁵ In fact, many of the remains from Cuba, Haiti, and Porto Rico seem more archaic, both in conception and execution, than similar objects from continental levels of a remote antiquity.

A word must be said in respect to some specific characters of the rocks generally employed by the Antilleans which may have misled several investigators in their appreciation of the cultural status of the aborigines. It is well known that a majority of the sculptures are made on rocks of great hardness, susceptible of a high degree of polish. Now these two qualities possess a peculiar power of improving the esthetic value of the incised or carved patterns to such an extent that they are apt to disguise or conceal the primitive grotesqueness and crudity of the conceptions involved. The art interpreter, subtly deceived by the testimony of his own senses, is in danger of making a false induction when attributing to the maker of the relics a higher cultural status than that really attained by him. It could be experimentally shown that those carvings which have so often elicited the admiration of the student, if reproduced in a soft, porous, unattractive sort of material, incapable of taking polish and fixing linear and surface details with the same effect, accuracy and stability as the smooth-surfaced volcanic rocks would not only look relatively more primitive but their intrinsic qualities as works of art would seem

⁵ "Ancient Civilizations of Mexico and Central America," Handbook series No. 3, American Museum of Natural History, N. Y., 1917

inferior. Comparisons of this nature may be made to advantage in any large collection of Antillean antiquities.

The fact remains that most specimens derive a considerable part of their beauty from the texture of the rocks themselves. In Porto Rico, for instance, the geologic environment is an important and favorable factor in the development of the lithic arts.

The material used generally consists of very hard, crystalline, igneous rocks—syenites, andesites, diorites, porphyries and granites. Of the rocks of sedimentary origin, certain hard varieties of marbles, found in situ on the southern coast, were also worked into idols. Several classes of serpentine, including a green jadeite-like stone are represented in the collections.⁶ It is furthermore obvious that the aborigines were not slow in grasping the advantages of one kind of material over another, for the fact that many of the best carvings are executed upon volcanic rocks proves that they had selected their material with discrimination.

Coming back to the question of the absolute characters of the remains we will recall that, according to Dr. Spinden, the most archaic examples of primitive (continental) sculptures are

boulders rudely carved in a semblance of the human form with features either sunken or in relief. The arms and legs are ordinarily flexed so that the elbows meet over the knees. The eyes and mouth in the most carefully finished pieces protrude, but the face has little or no modelling. Many celts are modified into figures by grooves, and faces are frequently represented on roughly conical or disk-shaped stones.⁷

The essentials of the above description but slightly altered would apply with equal force to most anthropomorphic carvings from the Greater Antilles. It is to be expected that in the succeeding pages of this paper the description and observations based on the Antillean material will convey to the reader a precise knowledge of its truly primitive characteristics.

Contrary to the expectations of the student of comparative American art there are abundant examples of stone figures from

⁶ For a detailed account of the geology of the island see "Scientific Survey of Porto Rico and the Virgin Islands," published by the New York Academy of Sciences, vol. 1, parts, 1, 2, 3.

⁷ *Op. cit.*, p. 54

Costa Rica and Panama belonging, according to Dr. Spinden, to cultures evolved from the archaic culture of Mexico which, while possessing many early characters, such as the protruding eyes, have the limbs partially, and sometimes even entirely, freed from the torso.

Somewhat later carvings are executed in the full round. Now, the writer does not know of a single example from the Antilles where the limbs are freed from the torso, nor does he know that this condition has ever been recorded by an archaeologist.

At most a rudimentary attempt had been made to free certain parts of the body of an animal- or man-shaped figure by perforations of roundish or sub-triangular shape. No more primitive way of attempting to secure the desired result can be conceived. It is true that the Central American specimens are commonly made on sandstone slabs, but in the West Indies, even when madreporic rock or sandstone has been used, we miss the presence of rectilinear perforations intended to separate parts of the sculpture.

Some of them exhibit certain traits indicative of progress along other lines—but then the evidence is not conclusive. We refer to the probability that some of the sunken eyes in the idols had these cavities covered by inlays of a foreign substance as was occasionally done in the case of clay and wooden effigies. At some continental levels of the archaic horizon protruding eyes seem almost to be the rule, but these are seen only in rare cases in the West Indies.

Summing up, then, we may conclude that the anthropomorphic stone carvings from the Greater Antilles should be considered as evidence of local (insular) developments of a specialized art evolved from the agricultural complex of eastern South America.

OBJECTIVE RESEARCH

For the purposes of the present study, the antiquities we are now discussing may be divided into two principal classes: (1) separate human heads, (2) semblances of the entire human body.

The following features are common to all objects of the first class:

- a. Monolithic character.
- b. Grotesque and conventional execution.
- c. Full-face position (no exception known).
- d. Defective relative proportion of features.
- e. Absence of representations of head- and face-hair.
- f. Absence of modelling intended to show certain changes in the form of the face that would indicate age, sex, and psychological state.
- g. The technique employed may consist in one, or in a combination of two or more, of the following methods: the incised, the deep intaglio, the low relief, and modelling in the half-round.

While there is a noticeable tendency to realism the results are often conventional owing to the inherent limitations of the art itself and to the nature of its inspirational sources. In the sculpture of the facial features there are no reflections or suggestions of geometric forms, as in other American cultures. In fact the realistic tendency is here often bolder than in the ceramic remains of the region. Man is, with the rarest exceptions, represented in a state of mental and physical inertness. The passivity of attitude expressed by the position of the arms and hands and the general lack of expression are remarkable characteristics of the statuettes. It is highly interesting to note—from the viewpoint of the history of art—the suggestive resemblance observable between certain types of amulets, especially those from Porto Rico, and the human embryo in its later stages of development, before it enters in its fetal stage.

Man is never shown as engaged in any useful occupation whatsoever. Except for a few body ornaments, ear-plugs, head-, arm-, and leg-bands, the carvings show man in the nude, even without a loin-cloth. He is, furthermore, never associated with any other artificial objects such as weapons or utensils. Tattoos and tribal marks are absent as well. There is a single example of rudimentary group sculpture, where two united twin figures are intended to serve as an amulet. The prevalent type of

carving—the motionless head with wide-open eyes and mouth—is somewhat suggestive of the face of a human being prostrated by the stupefying action of some narcotic. It is known that the priest-sorcerers of Haiti stupefied themselves (Las Casas) by means of the “cohoba” or “cojoba” snuff (seeds of a mimosa-like tree, *Piptadenia peregrina*).⁸ This ecstatic state being held in reverence by the aborigines may have influenced the religious art of the epoch.

The above mentioned facts induce a strong inclination to view the sculptures as mere imaginary semblances of spirit-beings. They are, without doubt, the outward material manifestations of the animistic concepts, beliefs, and cults of the race and we should therefore abstain from any desire to attribute to them an exclusive significance as evidences of naïve, spontaneous artistic efforts indulged in for the sole purpose of gratifying the esthetic sense. There being no trace of any endeavors to portray individuals, that is, to imitate nature, but, in an abstract sense, it will be readily understood that the underlying inspiration must have had a purely religious (animistic) origin. The fact that the statuettes are very seldom associated with symbols or with elements taken from other kingdoms of nature goes far to prove the simplicity of the animistic cults then in vogue. An exception to this condition is found in the three-pointed idols where the combination of human or animal forms with vegetable ones leads us to suspect that the aborigines had a knowledge of sympathetic magic, in this case applied to promoting the germination of certain food plants.

There are, indeed, but few and obscure clues which might permit us to recognize in the carvings veiled personifications of natural processes, agencies, and phenomena. It is precisely because of their very simplicity and isolation from other representative forms of life that they become enigmatical. *Who* are, for instance, the personages whose reversed heads of inchoate form are carved on the handle of an idol-like pestle from His-

⁸ Safford: “Narcotic Plants and Stimulants of the Ancient Americans,” Smithsonian Annual Report, 1916, pp. 396 et seq.

paniola? According to what is known of the animism of the Arawaks and Caribs, both insular and continental, it seems reasonable to believe that many of these carvings represent gods and spirits (*zemi*, *ceci*, *chemi*, *icheire*, or *chemin*). As far as Haiti is concerned there are historical data to the effect that these *zemi* represented the spirits of men, animals, rain, wind, vegetable growth, water, and plants. The range of their animism was, however, much wider; in fact, every object, being, process, and phenomenon was supposed to possess a "spirit." The difficulty of identifying the carvings will be realized. Basing our researches on the historical data at hand and on the investigations of recent writers in this field, we will tentatively propose the following identifications:

Frontal and pectoral amulets. Small idols of a war god or spirit perhaps believed to inspire valor in the wearer, strike terror in the opponent, render the wearer immune from harm. It may be that there was no particular war god, but that the image of any tutelary or nature spirit was used for these purposes, according to instructions received from the owner.

Engraved axes and "dirks." Objects of ceremonial use having a civil or a military significance, probably as insignia of rank (Fewkes).

Pestles. There is every reason to believe that those showing elaborate anthropomorphic forms may have been used during magico-religious ceremonies connected with agriculture as, for instance, the offering of first-fruits, rain-making, etc., or in grinding to powder the "cohoba" seeds for ceremonial use.

Disks and masks. Idol masks; replicas of the faces of idols which were probably carried on staffs by the participants in ceremonial dances, *areitos*, and on other similar occasions. The discoidal and the more massive death-heads are interpreted as funerary objects, probably mementoes placed on or near the graves.

Massive human heads. It seems that some are three-pointed (fertility) idols of the third type; others may be tutelary *zemi*, representing clan ancestors (familiar spirits).

Three-pointed stones. Fertility idols, the apex symbolizing

germination of the stem buds of certain root plants. It is believed that the anthropomorphic figure carved on some of them represents a plant spirit. Animal figures may represent: (a) those of animals which are beneficial to plant life, the stones then being employed in propitiatory practices; (b) those of noxious animals. The idol was then used in connection with rites of conjuration.

Elbow-stones. A part of an archaic form of the collar-stone, having a wooden complement, tied with a ligature to complete the circle or oval (Joyce).

Stone-collar (without life-forms). A fetish supposed to be the dwelling place of a tree-spirit or of any other spirit, including spirits of deceased human beings, accidentally dwelling in a tree and having been "captured" by a sorcerer in a stone ring. The stone collar becomes an idol when invested with the form (image) of the spirit lodged therein.

Idols embodying the entire human form. These are of rare occurrence in the stone art of the West Indies. At present there is no reasonable explanation to offer as to their true significance.

It seems that at the time of the Conquest the native stone-cutter was beginning to realize that it was possible to free the limbs of a life figure from its body. The islander had already made fair progress in the pictographic art, he had achieved no mean success in the incised technique, he had tried his hand in the field of low relief, and he was gradually mastering sculpture in the half-round. When a man, a lizard, or a bird is cut in one of the projections of a three-pointed idol, the head is prominently shown, sometimes partially detached from the stone, the limbs or wings being simply carved in low relief against the mass of the object. Generally, even in the best carvings of the entire human form, however, the head looks as if imbedded in a neckless trunk.

It appears that the carvings were not painted. One or two relics seem to have been besmeared with a kind of pigment, but it cannot be determined whether the purpose was to add to the effect by means of applied color.

Incised technique. A good deal may be learned about the influence of the tools in the development of Antillean art by carefully studying with the aid of an ordinary magnifying glass

the incisions made on the rocks. The effect of the physical qualities of the rocks on the esthetic character of the work then becomes evident.

These observations have revealed the following conditions:

- a. General rudeness of the work.
- b. Inability to overcome perfectly the physical qualities of the material—i.e., the hardness, porosity, etc. of the rocks. This accounts for the grotesqueness of the execution as evidenced by: tortuosity of straight lines, roundish lines meant for circles, variable depth and width of lines supposed to be of uniform depth and width according to the artistic exigencies of the pattern, asymmetry of line spacing, defective parallelism of lines, lack of precision in the junction of lines.
- c. Variable shape and depth of the cross-sections of the incisions, at points which should have uniform cross-sections had a more advanced type of tool been employed. In most specimens the incisions, according to their relative position on the surface of the object, generally have a similar cross-section. The bottoms of the incisions may be broad or sharp, with a roundish, trough-like or V-shaped cross-section. Generally the cross-sections of straight cuts are broader in the middle section than in their extremities. Sometimes the edges of an incision—as it loses depth toward either extremity—meet neatly in a sharp angle on the surface of the stone. These angles are an indirect record of the sharpness of the edge of the cutting implement. They often correspond to the edges of local implements known as “chisels.” In some cases one side or branch of the cross-section is longer than the other—the longer side making a wider angle with a vertical plane passing through the bottom of the cross-section than the shorter side. This condition is probably caused by an

increase of pressure of the cutting instrument toward the wider side of the cross-section. It reveals primitive ways of working—imperfect hold of the object being worked or of the implement. Fine instrument marks show that the incisions were made by pressing the tool back and forth along the line. Occasionally the edges have been polished down. Their present condition depends, of course, on the resistance of the stone, and on the amount of wear and erosion to which it has been subjected.

THE HUMAN FEATURES. We will now present a series of drawings illustrating the methods employed to represent each one of the facial features.

The forehead (Fig. 70). In relief work, it is narrow and sloping backwards, another example of a tendency to realism. Compare the profiles of the carved heads (Nos. 1 to 27, of the series) with the profiles of a prehistoric skull from the Bahamas (No. 39).

Often the foreheads on engraved axes are higher than those on other classes of objects. This may be explained by the fact that the half-round extremity, the edge-end of the blade, corresponds to the position of the forehead of the engraved image. Now and then the eyebrows meet sharply above the nose, forming a V-shaped design which is sometimes ornamented by the insertion of a small circle.

The eyes (Fig. 71). The following are general characteristics:

1. The eyes are represented by means of roundish, circular, oval, or elliptical pits of variable depth.
2. There are no representations of eyeballs, eyelids, and other minute details.

Very seldom the superciliary ridges are shown in a conventionalized way. The borders of these eye-cavities are sometimes shown in low relief.

The nose (Fig. 72). As a rule the nose was rendered in the simplest fashion. Generally its outline is formed by the inner margin of the orbits and the upper lip. The nostrils are rarely shown. Among others a few masks and three-pointed idols of advanced types show this detail.

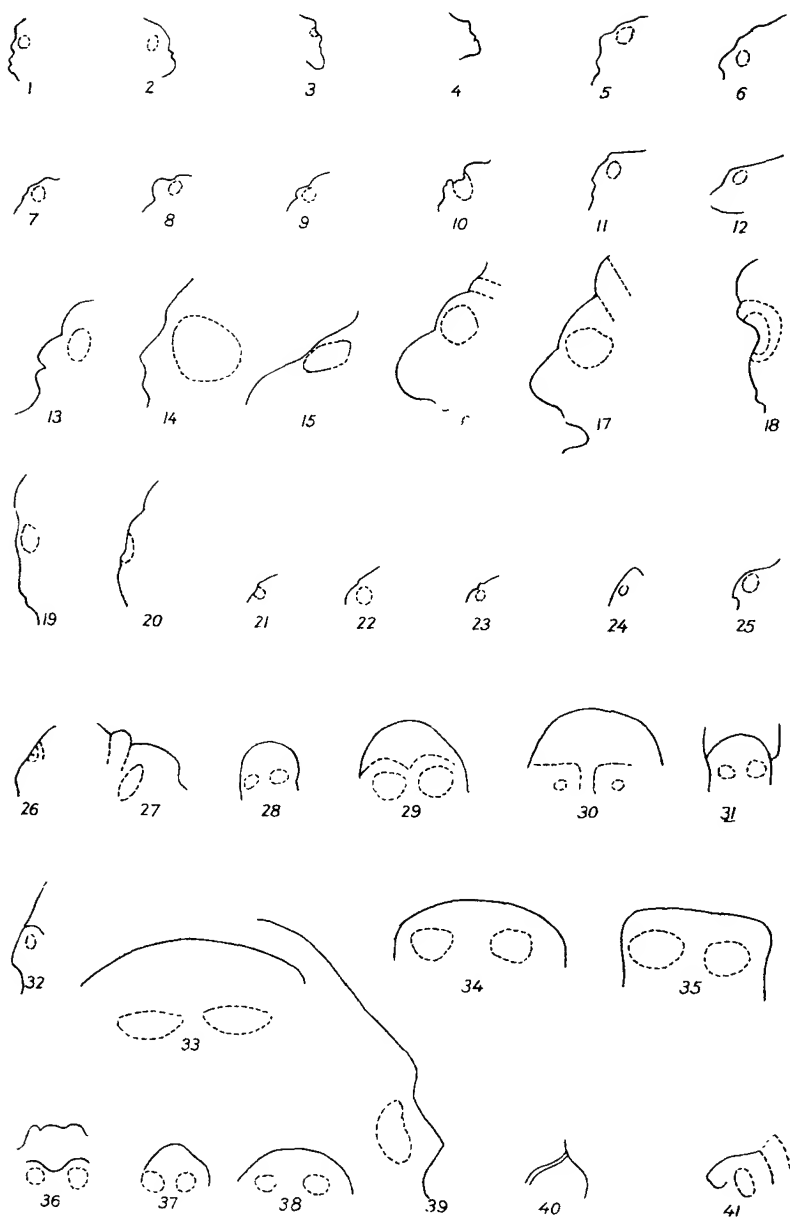


FIG. 70.—The Forehead: 1-12 from three-pointed idols; 13-17 from massive stone heads; 18-19 from discoidal heads (masks?); 21-25 from amulets; 29-34, 38, 40 from engraved axes; 35, 37 from elbow-stones; 36 from a stone collar; 39 from a prehistoric skull from the Bahama Islands (for comparison).



FIG. 71.—The Eyes: 1, 2, 27, 28, 30 from engraved axes; 3 from a perforated disk; 4, 8-11, 20, 21, 25 from three-pointed idols; 5 from a disk; 6 from a mask; 7, 32 from stone heads; 12 profile of a protruding eye on a stone head; 13 from a stone collar; 14 from a squatting idol; 15-19 from pestles; 22-24, 33 from amulets; 26 a pictograph from St. Vincent introduced for comparison; 29 from an idol; 31 from an engraved stone (rain fetish?).

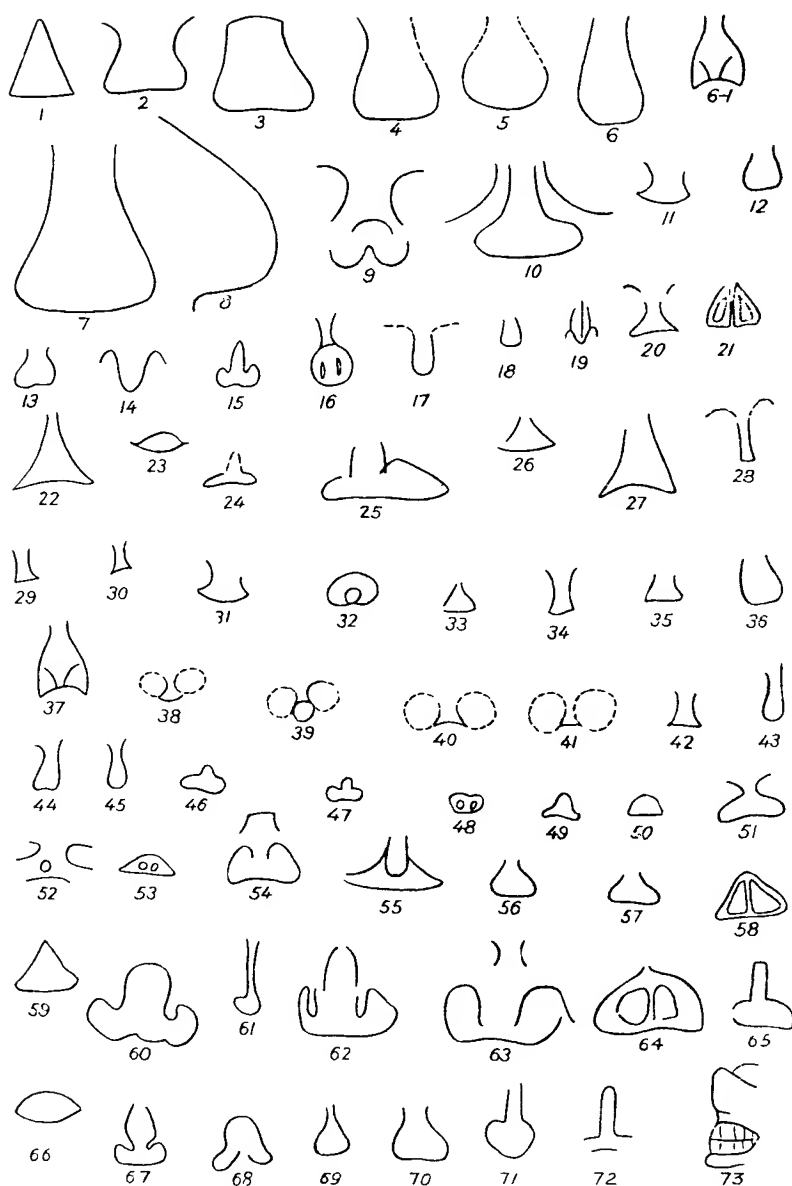


FIG. 72.—The Nose: 1-4, 11, 28-31, 34 from engraved axes; 5, 6, 6-1, 58 from stone masks; 7, 9, 10, 46-57, 59 from three-pointed idols; 8 from profile of 7; 12-15, 36, 73 from amulets; 16 from a three-pointed idol from the Virgin Islands; 17-20, from engraved axes, Santo Domingo; 21 from an idol, Santo Domingo; 22, 24, 25 from elbow-stones; 23, from a collar; 26 from a ceremonial baton; 27 from an engraved celt (Mari-guana); 32 from a three-pointed stone; 33 from a stone figurine; 35, 39-45 from pestles; 37, 60-72 from stone heads; 38 from a pestle (Santo Domingo).

It is interesting to note that there seems to be a close relationship between the method of rendering the nose and a possible time sequence of the relics. The triangular and sub-triangular noses appear in the most primitive-looking specimens. The gradual curvature of the base of the triangle, the separation of its sides from the inner orbital margins, until a somewhat pendant-like or pear-shaped figure results, the slow increase of the relief and the addition of modelling to suggest the nostrils are the several steps which mark the evolution. Furthermore, the supposition is corroborated by the fact that there is an unmistakable relationship between the degree of relief and the degree of perfection with which the nose is executed. Note the simplicity of the nasal features cut on the surfaces of engraved axes, disks and other objects having slightly convex surfaces. Compare with the nose of solid stone heads and three-pointed idols. See Nos. 60, 62, 63, of the series.

It may be added that the nose is generally wide, a feature which tallies with a well-known somatic character of the race; but sometimes it is widened to exaggeration.

Seen in profile, the nose is, with few exceptions, flat and wide. Certain objects classified by Fewkes⁹ as "stone heads" show very prominent and remarkable noses. It seems that they are prominent because of their particular function in the symbolism of these objects rather than because of artistic improvement. If this is so, the stones should be classified as three-pointed idols of the third type. The nose would then correspond to the apex of the conoid process in other types.

The ear (Fig. 73). In incised and low relief work the ear is usually represented as a roundish and elongate protuberance carved in low relief having a small pit or circular hole mark either in its center or in the inferior part. This protuberance may be roughly semi-circular, oval, or loop-like. When oval it may be elongate, now in the vertical, now in the horizontal direction. Sometimes it has a somewhat angular outline. It seldom approaches the true form of the ear. When elongate in a vertical

⁹ 25th Annual Report, B. A. E.

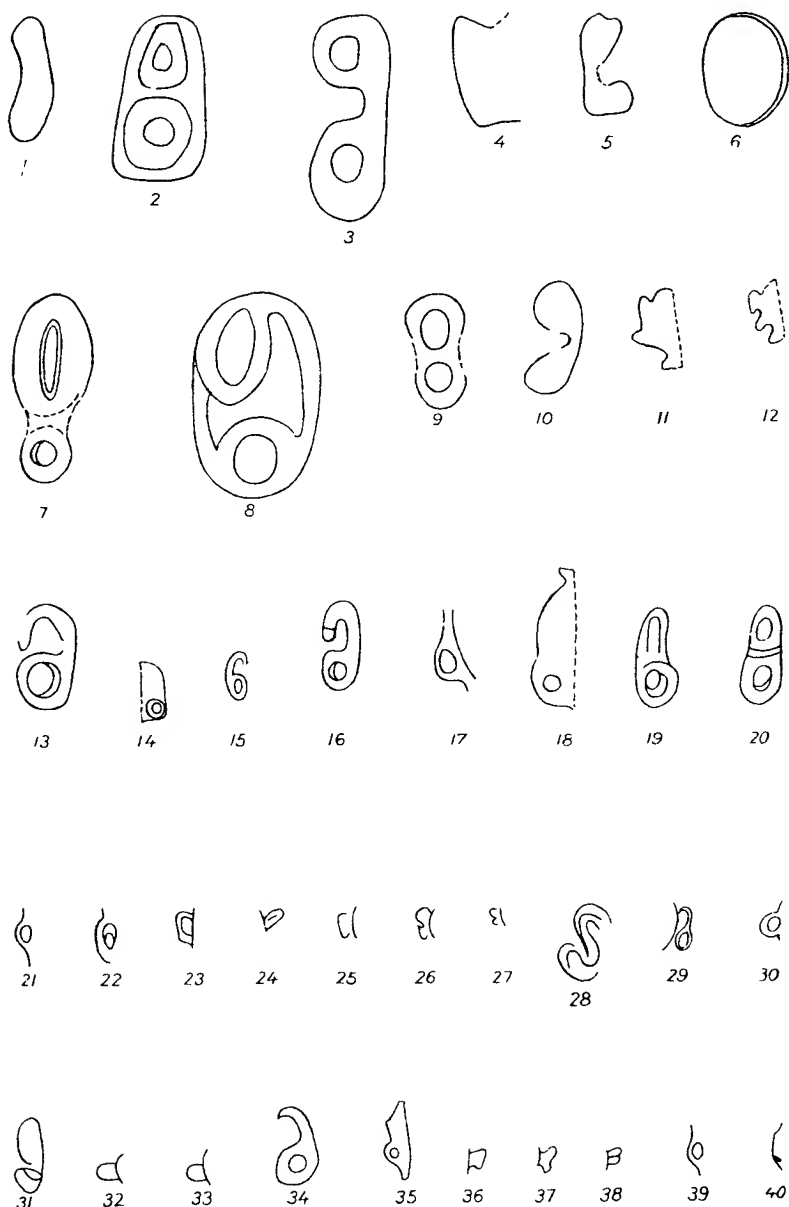


FIG. 73.—The Ear: 1, 13, 28, 34 from three-pointed idols; 2 from a mask; 3, 15, 17, 20, 31 from stone heads, 4-7, 11, 14, 19, 23 from pestles; 8 from a stone head (the Macoris head); 9, 10, 16 from three-pointed stones; 12 from a wooden idol from the Bahamas introduced for comparison; 18 from a stone mask (discoidal); 21, 22, 39 from elbow stones; 24-27, 29, 32, 33, 36-38 from pictographs; 30 from a pictograph (Lesser Antilles); 35 from a stool or "duho" (Lesser Antilles); 40 from an engraved celt (Lucayan).

sense it is often much broader in the inferior than in the superior portion, probably showing an artificial distention of the lobe from the insertion of ear-plugs.¹⁰ Sometimes there is no hole mark.

In work of higher relief the ear is shown as a curious object consisting of a round or roundish inferior part and a superior part somewhat hook-like in form which bends down and to the front in the direction of the lobe. Sometimes it coalesces with the lobe, the ear then resembling a number 8. The resemblances to a number 6 and an inverted number 9 are characteristic of the region.

An effort was made—in a curious conventionalized way—to represent three parts of the external ear: the helix, the concha, and the lobe. The lobe is often shown so distended that it looks much wider than the helix.

After examining a large number of specimens it is permissible to infer that the aborigines found greater difficulty in carving the ear than in the execution of any other facial feature. The modelling of the details was certainly beyond their power. Its location is often erroneous, not to say comically puerile. Several "heads," full-face carvings as usual, have the ears reversed, that is, the tragus opens toward the back of the head. In one or two specimens the ear projects over the head, a feature which may indicate that the carving represents an animal or a mythological personage having both human and animal features.

The mouth (Fig. 74). Generally the mouth is represented as a shallow excavation in the shape of an oval or elliptical pit, with its borders in low relief, to show the lips. Straight lines or slits are seldom seen and, with few exceptions, in pictographs only. The mouth is shown open in at least ninety-five per cent of the specimens. Often it is wide open, so as to allow a full view of the teeth,

¹⁰ The Antillean spool-shaped ear-plug had a wide distribution. There is one figured by Mason from the Lesser Antilles ("The Guesde Collection of Antiquities in Pointe-a-Pitre, Guadeloupe"); another, from Porto Rico, is in the writer's collection; stone and wooden idols from Santo Domingo and the Caicos (Turks Islands) show it in use (Fewkes: 25th A. R., B. A. E.); one or two, from Cuba, were collected by Harrington ("Cuba before Columbus," part 1, vol. II.). It was also known in Jamaica (Joyce: Jour. Royal Anthr. Inst., vol. 37, 1907).

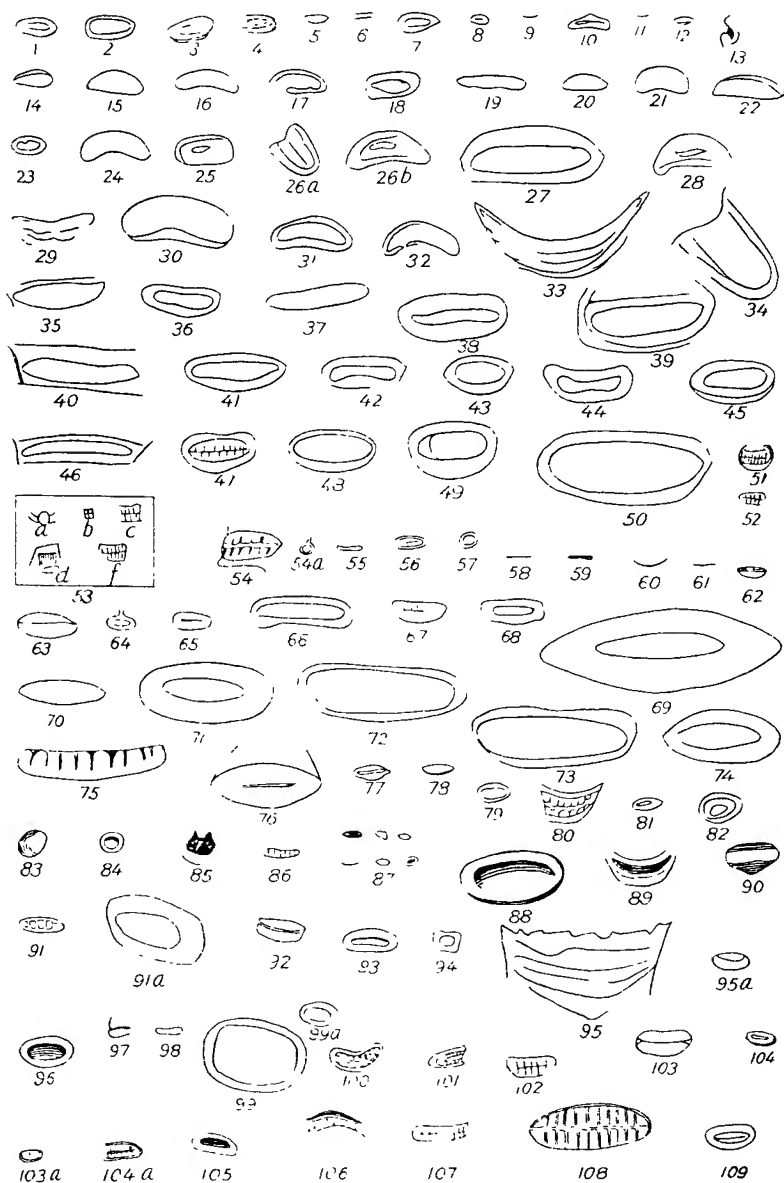


FIG. 74.—The Mouth 1-12, 77, 78, 93, 94, 98, 101, 101a from pestles; 13-34, 72, 95 from three-pointed idols; 35, 36 from massive stone heads, 37-46, 100, 103 from stone heads; 47-50 from stone disks (masks?), 51-53 (a-f), 54, 97, 106 from amulets; 55-62 from amulets, 63, 74, 88, 90, 99 from elbow-stones; 64, 65 from pillar-stones; 66-68, 92, 105 from idols; 69, 70, 82-85, 91, 96, 103a from engraved axes; 71 from an engraved disk; 73 from a massive head; 75 from a squatting idol; 76 from a pictograph; 79 from a stone stool (Lesser Antilles); 80 from a three-pointed idol (said to have been found in the Virgin Islands), 81 from a monolithic ax; 86, 87 from pictographs from the Lesser Antilles, 89 from a stone collar, 101 from an engraved ax (Cuba); 102 from a fetish; 103 from a shell inlay; 109 from a head.

when these are present. Whenever a gaping mouth is carved, the rigid, smooth, retracting lips are never shown, by means of modelling, to cause corresponding movements of the facial muscles, thus giving to the statuettes an aspect of absurd and unnatural serenity. It is possible that the object of carving these long, curved mouths—which some authors have interpreted as intended to picture a grimacing face—was simply to afford a secure hold to the piece of conch shell covering it.

As a rule the lips have a uniform width throughout. The upper and under lips have a similar, often identical, outline. Sometimes the under lip is slightly incurved and the upper lip is indented in its middle portion. In Porto Rico both variations occur with almost equal frequency, but in Haiti the notching of the upper lip occurs oftener. This may be a sign of slight superiority in Quisqueyan art. At any rate, it may assist the student in the geographic classification of specimens.

The tongue- and lip-plugs and labrets are not represented.¹¹

The teeth appear carved in a few instances, principally confined to small objects like amulets and pestles from Hispaniola. Judging by the rough, unpolished condition of the surface enclosed by the lips, in many different sorts of objects, it may be supposed that the mouth was completed, as in wooden idols from Cuba, Jamaica, and Haiti, by the addition of inlays showing the teeth.

Two methods were employed to represent the teeth: (1) single, vertical and parallel incised lines, extending from lip to lip, (2) the vertical lines interrupted by a median horizontal line, to show upper and lower teeth. Fig. 80, of the mouth series, is a good example.

Size of mouth. The size of no other feature was so exaggerated as that of the mouth. Often its corners reached to within a fraction of an inch of the lobes of the ears. As a rule the distance from the superior border of the upper lip to the base of the nose is too short; sometimes there is none. When these two lines coincide the nose then assumes a roughly triangular outline.

¹¹ Columbus writes about certain wooden masks from Haiti with ears, eyes, and tongue of gold

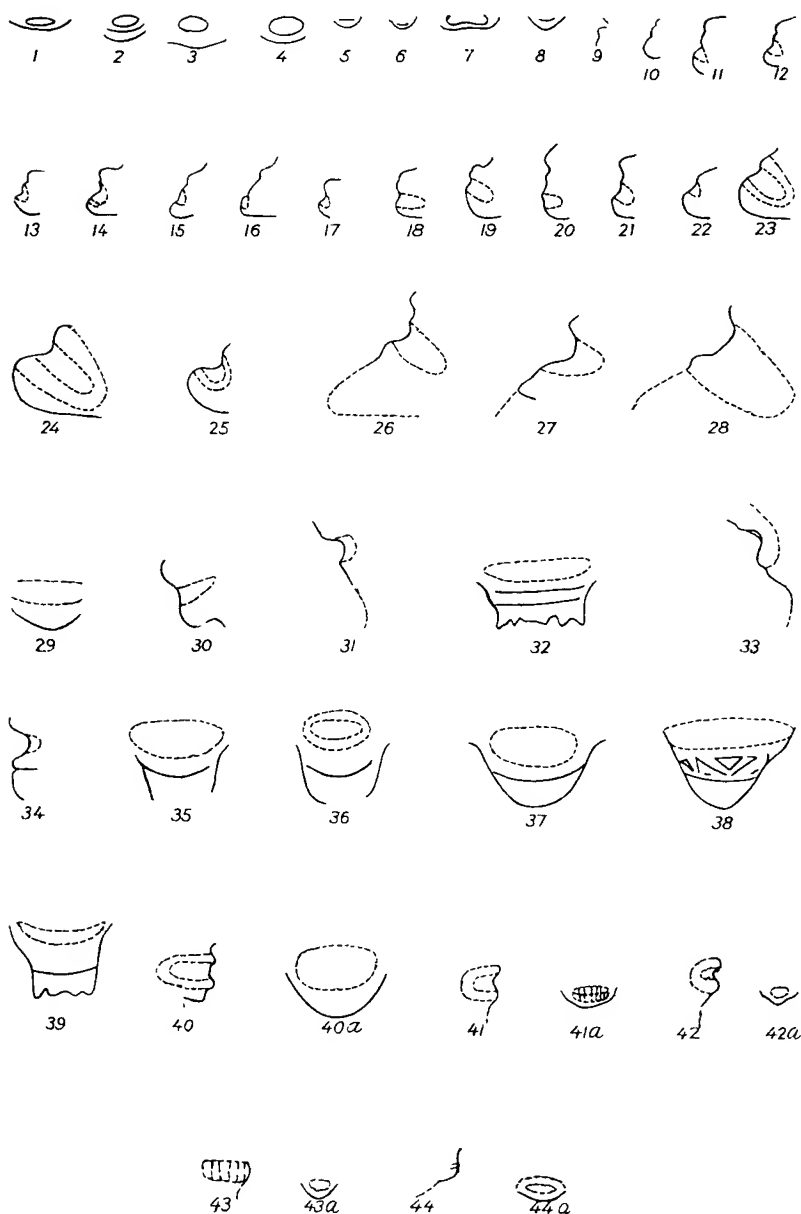


FIG. 75.—The Chin: 1-8, 41, 42, 44a from pestles; 9-28 from three-pointed idols; 29-40 from massive heads and masks; 40a from a discoidal engraved stone; 43 from a squatting idol; 44 from an engraved ax.

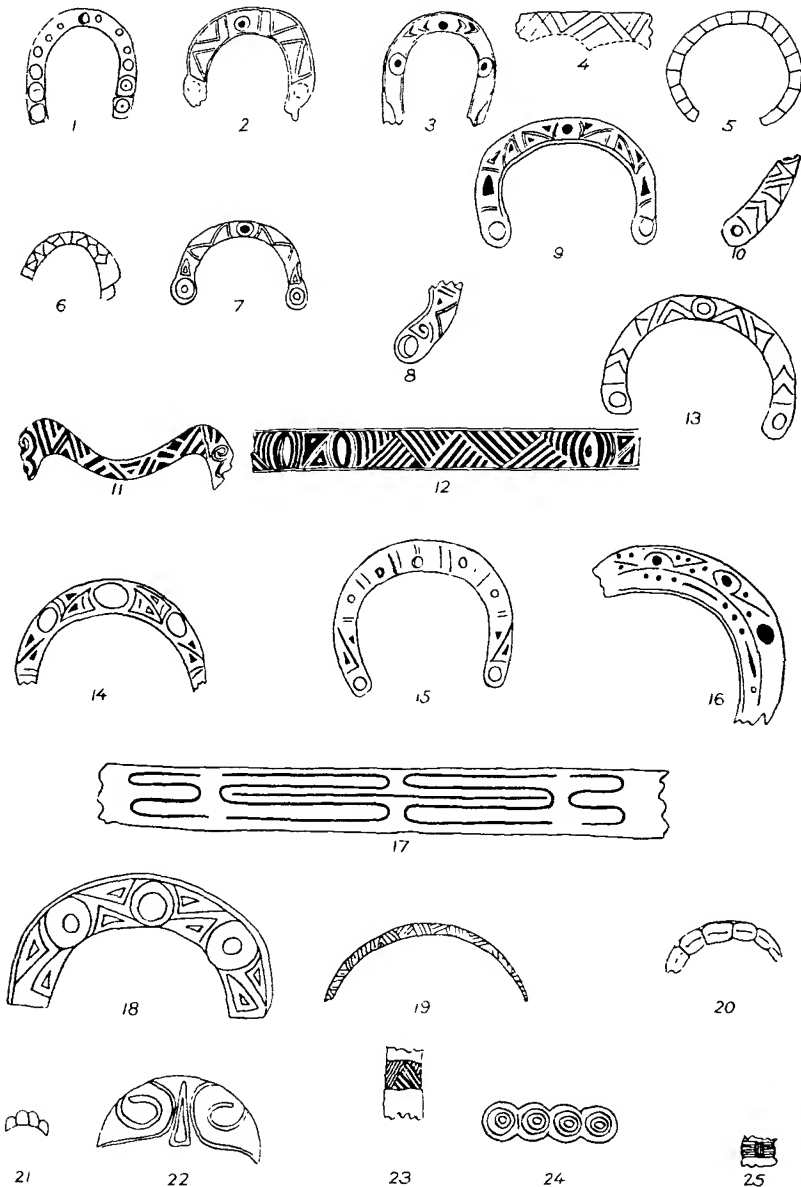


FIG. 76.—The Head band: 1-3 from elbow-stones; 4 from an engraved bone; 5, 6 from pictographs (St. Vincent); 7-13 from three-pointed idols; 14 from a massive head; 15, 16 from engraved disks; 17 development of a band from a wooden idol (Santo Domingo); 18 reconstruction from a head engraved on a disk (Porto Rico); 19 from a wooden idol (Jamaica), anthropomorphic; 20 from a wooden idol, bird-shaped, (Jamaica); 21 feather-shaped ornament from an amulet (Santo Domingo); 22 head ornament resembling a woven cap (Santo Domingo); 23, 24 leg-bandage pattern from wooden idols (Santo Domingo); 25 arm bandage pattern from a wooden idol (Santo Domingo).

The chin (Fig. 75). Very little attention was paid to it. Many heads are practically chinless. Generally, the size of the chin relatively to the other features is considerably reduced. No care was ever taken to show its details.

The head band (Fig. 76). The forehead is frequently surrounded by a decorated band or fillet. In the case of human heads, these bands often drop down to the ears. As a frontal fillet of cotton or other fabric of the primitive type we are now discussing would be tied behind the head passing horizontally above the ears, it is possible that those showing decorative devices placed vertically above the ears represent a type of fillet having lateral extensions or flappers which hang over them. This type of ornament, which no doubt implies elaboration, is found associated with human heads only. Simple geometric devices make up their decoration: angular and parallel lines, chevrons, triangles, circles and ovals.

The following table shows the distribution of the head-band among the several classes of objects known to the author, showing biomorphic figures:

Amulets.....	1
Bone Objects (handle of "swallow stick"?).	1
Elbow stones.....	3
Stone disks (ritual mask, funerary mementoes?).	3
Three-pointed idols.....	13
Wooden idols (anthropo- and theriomorphic).....	4
<hr/>	
Total.....	25

It will be noticed by studying the above table that the head band is exclusively associated with objects undoubtedly having a religious or ceremonial use. Out of 25 cases (see above table) it appears together with anthropomorphic figures in 23, or 92 per cent of the total, and only twice, or 8 per cent, in animal (bird) figures. As the majority of these objects were idols or were in some way connected with idol-worship, there is strong reason for believing that the head band had a purely religious or sacred use. The fact should be noted that human heads cut on the surfaces of certain axes and celts are never decorated with these appendages. Should this be interpreted as meaning that,

if engraved axes were ever ceremonial objects, they should not be classified with other relics connected with the worship of nature spirits? Perhaps future research will find for these axes a place among the civil and military paraphernalia of the Antilleans.¹²

The geometric designs accord well with the supposed textile nature of the fillets. The arrangement of the several devices is pleasing; good taste is often shown in filling space. The general character of these devices corresponds to a rudimentary stage of textile art. There is an abundance of simple rectilinear design. The curvilinear patterns are restricted to elementary forms, circles or ovals, which may, after all, given their perfect contours, represent foreign bodies interwoven in the fabric. No zoöomorphic or other life-forms are seen. We find in this analysis additional confirmation of our belief in the general rudimentary character of Antillean art. It seems that the period of isolation of the South American tribes in the West Indies was prolonged enough to develop modifications in the imported arts—though not of a radical technical nature. If startling new forms originated they may be explained as the results of a change of environment, which confronted the invaders and their immediate descendants in the struggle for life, particularly in the securing of food.

Thus we may explain the existence of the three-pointed idol and the stone collar as reflecting conditions of primitive belief evolved from ancestral (continental) forms applied to a different, insular flora and fauna—both wild and domesticated.

Attention must be called to the resemblance of the designs of the frontal bands to those worn on the arms and legs,¹³ perpetuated in aboriginal sculptures. (Compare Nos. 12 and 23 of these series.) As suggested above, the small circles and ovals may represent small showy stones, shells or plates of gold. Scil-

¹² Fewkes "Engraved Celts from the Antilles," *Contr. Heye Mus.*, vol. 2, no. 2, p. 4.

¹³ Even to this day certain Arawak tribes of British Guiana and Brazil are in the habit of wearing bandages around the ankles, above the knees, and around the wrists and arms. See plates in Farabee's "The Central Arawaks" (1918).

lacio¹⁴ speaks of a dozen belts (from Hispaniola) polished with admirable art and some of them variegated with thin plates of gold, interwoven in the cotton fabric with wonderful skill.

In this connection it should be remembered that Dr. Chanca once wrote that on a certain occasion Columbus received a present of a gold cap of jewel work. No. 22 of this series is a head ornament taken from a stool from Santo Domingo which certainly resembles a "cap."

Pose of the stone figures. We find three principal positions of the body in stone art—as well as in clay and wooden sculpture:

- a. Squatting: the weight of the body resting on the heels; thighs horizontal, knees together and pointing to the front, or, when the weight of the body is merely thrown down against the posterior part of the foreleg, the knees point upward, at about the height of the chest; toes point to the front.
- b. Kneeling, the buttocks resting on the heels.
- c. Standing, with closed, stiff and straight legs.

In all three positions the arms and hands are held against the chest or the abdomen. Rarely they support the chin, or rest on the knees. In two instances only (amulets from Santo Domingo) the hands are held at the height of the head.

There are, however, a few aberrant forms. An amulet from Santo Domingo shows a human being sitting on the heels, the feet turned completely outward, to the right and left respectively.

Significance of the poses (Figs. 77-79). These positions may be divided into two classes: (a) the real, (b) the fantastic. In interpreting those of the first class, fresh and perhaps unexpected proofs of the realistic tendency of Antillean art will be obtained. The analysis of those of the second class will give us a chance to correlate interesting ethnologic data on the Indians of this region.

Anyone unacquainted with the customs and habits of certain sections of the modern population of Haiti and Porto Rico, and with the contemporary accounts of the customs of the aborigines at the time of the Discovery, would, on beholding the sculptures,

¹⁴As quoted by H. Ling Roth, "The Aborigines of Hispaniola," *Jour., Anthr. Inst. Gr. Brit. and Ireland*, vol. XVI, no. 3.

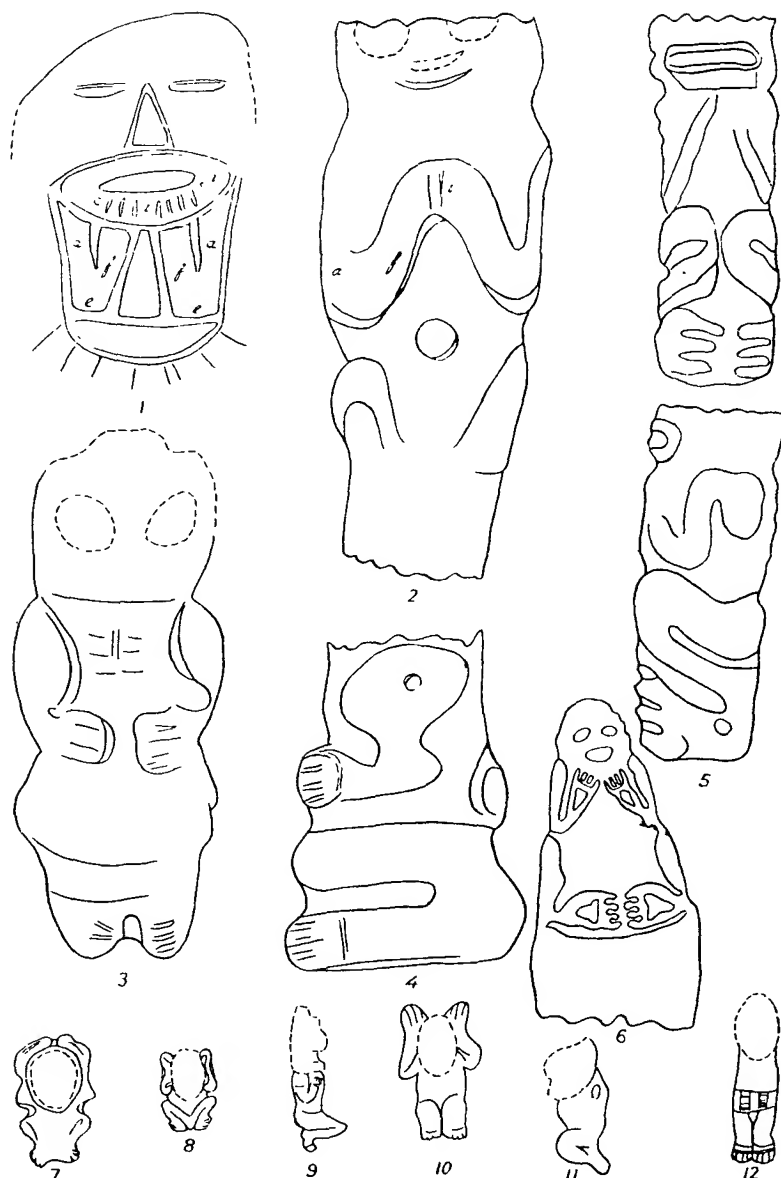


FIG. 77.—The Limbs: 1 engraved celt from Porto Rico, showing a head with the chin resting on the palms of the hands (*a* arms, *e* elbows, *f* forearms, *i* fingers); 2 engraved celt from Porto Rico; 3, 4, front and lateral views of a squatting idol from Porto Rico; 5 front (above) and lateral (below) views of a squatting idol from Cuba; 6 from a pillar-stone; 7-12 from amulets.

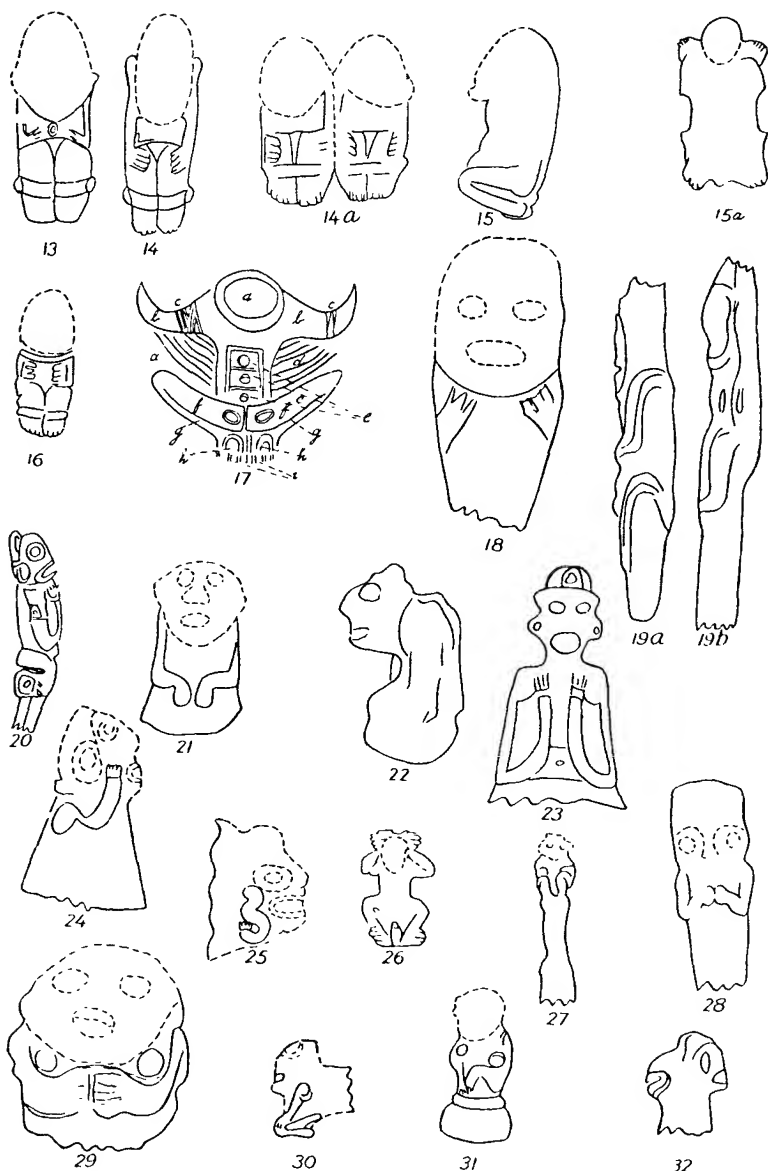


FIG. 78.—The Limbs (continued): 13-16 from amulets; 17 from a three-pointed idol (*a* apex of conoid process, *b* arms, *c* arm bandages (textile), *d* ribs, *e* vertebrae, *f* thighs, *g* forelegs, *h* soles of feet, *i* toes); 18 from an engraved ax; 19 (*a*, *b*) engraved celts (Santo Domingo); 20 carved bone object; 21, 22, from pestles; 23 from a stone stool (Lesser Antilles); 24 from a pestle (Jamaica); 25 from an engraved ax; 26 fantastic position of amulet from Haiti; 27 from a disk (Haiti); 28 from an engraved ax (Haiti), 29 from a stone rubber; 30-32 from carved pestles (Haiti).

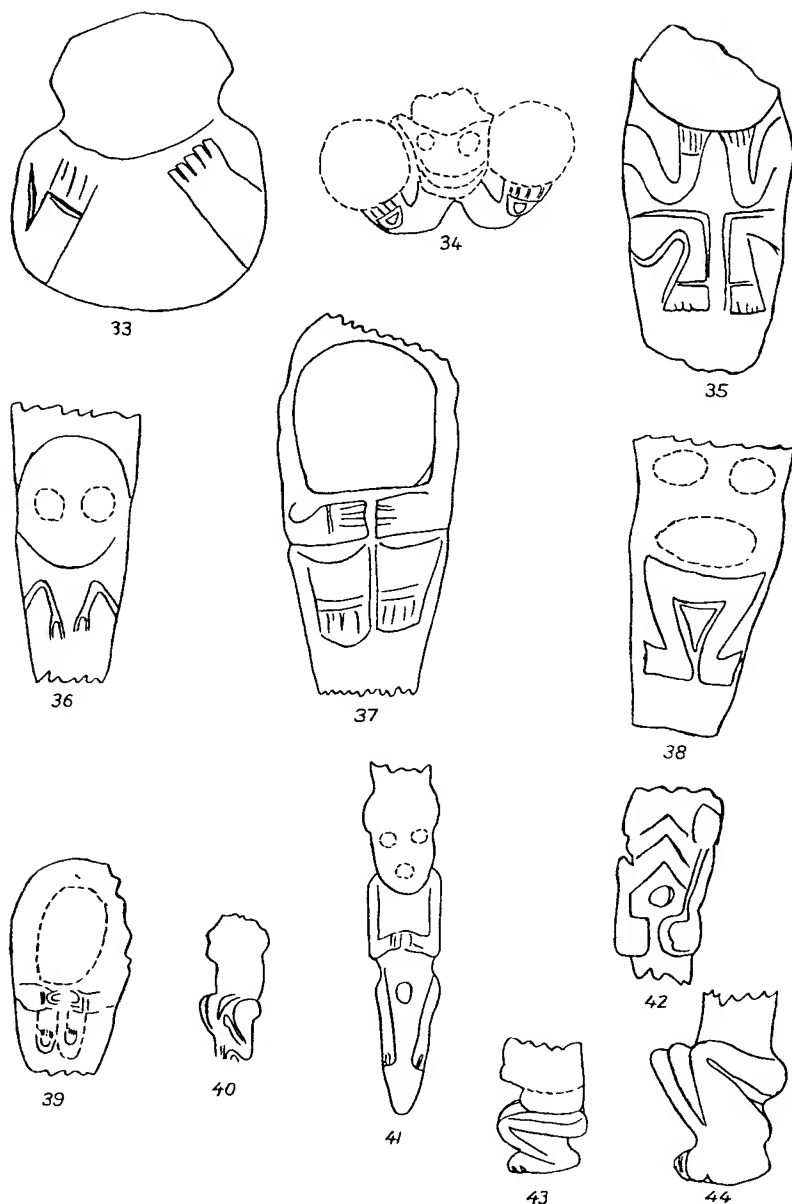


FIG. 79.—The Limbs (continued): 33 from an engraved ax; 34 from a stone collar; 35 from an engraved celt (Bahamas); 36 from an engraved ax (Haiti); 37 from an engraved ax (Virgin Islands); 38, 39 from elbow stones; 40 from an amulet; 41 from an engraved celt; 42 from an idol (Cuba); 43 from an amulet (Cuba); 44 from an amulet (Santo Domingo).

representing beings sitting on their heels, be apt to indulge in elaborate speculation on the significance of the position. However, all mystery fades from the mind of one who has himself lived in the West Indies, and who has repeatedly seen the country-folk of the islands—the “jibaros” of Porto Rico, the “vales” of Santo Domingo—sitting on their heels, especially when at leisure chatting and telling stories for hours.

The custom is of Indian origin. We learn in the *Apologética* of Las Casas that it was extensively practised by the aborigines. In a humid, tropical country infected with “jiggers” and other noxious insects, if they wanted to rest, men would naturally squat, so as to expose the body as little as possible to contact with the ground.

The native stools (“duhos”) were contrived to further facilitate rest by squatting on a raised surface.

A considerable number of the beings depicted on small objects, like amulets and pestles, while evidently anthropomorphic, are not intended to picture human beings. They have a limited resemblance to man and the features are so peculiarly modified—theriomorphized—the limbs so strangely distorted, that we feel justified in ascribing to them, after much thought and detached consideration, a truly fantastic character. However, an honest hater of fiction often finds himself unexpectedly rewarded with reality’s munificent liberality. According to Friar Ramon Pane,¹⁵ the Quisqueyan priest, *while under the influence* of the “cohoba” snuff, received instructions from the spirit as to the shape its idol should have:

Then that tree or *cemi*, become an idol or devil, replies to him telling him the shape in which it wants to be made. And he cuts and makes it in the shape it has directed. . .

It is then easy to believe that the pathological hallucinations of the devotee under the “cohoba” narcosis took the shape of intense fantastic images, the range of whose forms were, nevertheless, limited by the personal experience of the subject. The

¹⁵ Appendix to Ferdinand Columbus’s “Historie,” cap. xiv, p. 137a.

supernatural beings beheld during the trance evidently retained a marked resemblance to those current forms of life which were familiar to the dreamer. If we judge by the archaeological remains, the spirit manifested itself in the shape of a man, animal, or spectre. But we do not detect the effects of a creative fancy enriched by exotic elements. It should perhaps be recalled here how De Quincey stated in his *Confessions* that "to judge of the wonders of opium it would be absurd to listen to a cattle-dealer since he would dream only of herds and pastures." Thus we may trace in the art of the Antillean animists the effect of narcotic inspiration in such features as abnormal contortions of limbs; spectral images, suggested by death-heads—combining in one features of life and death; caricaturesque exaggeration of individual features; theriomorphizing of human elements; anthropomorphizing of animal elements.

Other factors leading to confusion are the native's ignorance of foreshortening, his defective sense of proportion, and his mechanical deficiencies. By a careful analysis of these negative factors, it is often practicable to unravel the meaning of the disfigured objectives.

A more real obstacle lies perhaps in the way of the investigator who would attempt to elucidate the significance of the position of the lower limbs in the three-pointed idols. In these objects the human or animal body depicted generally appears to be in the prone position, as lying down on the abdomen. The positions of the legs and feet are those of a crawling man. The soles of the feet lie on a vertical or oblique plane, the toes pointing downward, as if touching the ground or the base of the object, suggesting that propulsion of the human or animal being represented is obtained by pressure of the toes on the ground. In one aberrant form from Porto Rico, the toes point upwards in a meaningless and physically impossible contortion. When arms or forelegs are engraved, their position is compatible with that of a crawling man or animal.

The author has suggested elsewhere¹⁶ that three-pointed

¹⁶ "Three-pointed Stone Zemi or Idols from the West Indies: An Interpretation," *Am Anthropologist*, vol. 25, no 1, pp. 56-71.

stones are fertility idols, and that the man-like figures carved symbolize the plant spirit supposed to promote the germination of the particular plant, object of the cult. This interpretation would explain the apparent mystery of the pose of the life-figures shown. As, according to this theory, the conoid processes would represent the stem buds of certain food tubers, the human being emerging from it, growing out of it as it were, would in all probability represent the plant spirit squatting out of the germinal bud.

Death heads. Certain stone heads from Porto Rico were evidently intended to represent skulls.¹⁷ The artist's purpose was accomplished by carving enormous orbital cavities and sunken cheeks. Instead of the nose, a conventional outline of the anterior nasal aperture, showing sometimes the anterior nasal spine, leaves no room to doubt the correctness of the identification. In place of the mouth a long, narrow and shallow excavation extends across the whole width of the anterior surface of the object, reminding the observer of the alveolar margins of a skull seen in its *norma facialis*. Less than one half of the profile of the skull is given in the best specimens. The frontal bone, as in the representations of living subjects, is flattened. The sutures, the teeth, and the notches of the alveolar margins are never shown.

Body details. Scattered among the several specimens depicting the entire human body, or some of its parts, we observe that besides the head, the torso, and the limbs, the most commonly imitated details of the body are the umbilicus and the male sexual organ. Many specimens are devoid of sex distinctives. The almost complete absence of female organs in stone art is remarkable. In Central America, stone figures which may be morphologically connected with the typical sitting female figurine thought to be an agricultural idol symbolizing fertility are known to occur. A few relics which may be counted on the fingers of one's hand show sketchy semblances of the backbone and the ribs. Three or four vertebrae are shown by means of quadrilateral devices enclosing a small pit. A few incised lines

¹⁷ Fewkes: 25th Ann. Rep., Bu. Am. Eth., pl. L, b, b'.

stand for ribs. These devices, which are also seen on certain clay figurines from Santo Domingo¹⁸ and Porto Rico,¹⁹ unquestionably connect the ceramic and the lithic arts of the Haiti-Porto Rico culture area.

SUGGESTIONS FOR A COMPARATIVE STUDY OF THE STONE
ART OF *QUISQUEYA* (HAITI) AND *BORIQUEN* (PORTO RICO)

1. In both islands objects with anthropomorphic elements conform to the classification given at the beginning of this paper (page 525).

2. The place occupied by the carvings in the cultural levels of America is apparently the same.

3. The geologic character of the rocks employed in both islands is very similar, though there seems to be a greater abundance of carvings made on softer, more porous rocks, in Haiti.

4. The specific features which were found to be common to all sculptural heads (page 530) apply equally in both cases—with the following exception: the most advanced type of sculpture of the human head so far discovered in the West Indies comes from Santo Domingo (southern coast, Macoris province, Fig. 80). Its unique characters follow:

- a. Nearly accurate relative proportions of six facial features (forehead, eyebrows, eyes, nose, cheeks, and ears).
- b. Nearly accurate relative position of these six features.
- c. Presence of modelling that shows changes in the type of face that indicates age (well-modelled, prominent cheeks and malar bones, retreating or sunken mouth, indicating old age).
- d. Most complete execution of the head in the half-round.
- e. Delicately carved neck.

¹⁸ Fewkes: "Aborigines of Porto Rico," pl. LXXXII, a; Pinart: "Note sur les Pétroglyphes et Antiquités des Grandes et Petites Antilles," Paris, 1890, planche 11, fig. 1.

¹⁹ De Hostos: "Prehistoric Porto Rican Ceramics," Am. Anthropologist, vol. 21, no. 4, fig. 50, b.

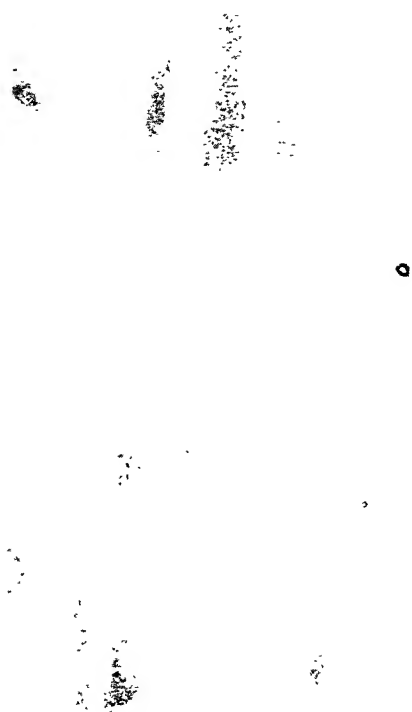


FIG. 80.—Front and side views of “the Macoris head,” a black stone head found near Macoris, Dominican Republic.

5. The only example of rudimentary group-sculpture (twin-amulet) also comes from Santo Domingo.

6. The only figures showing ornaments different from those enumerated in the body of this paper were found in Santo Domingo. One shows a circular breast pendant, the other a head-dress which may represent feather work.

7. In the two islands man is always shown in a state of immobility. However, certain pictographs from Samana, Santo Domingo, figured by Pinart,²⁰ represent human beings in a state of bodily activity.

8. The Macoris head exhibits certain peculiarities which show a quality of portraiture.

9. The most advanced type of engraved celts, the so-called "dirks"—where the outline of the celt has been modified in order to emphasize the contour of the engraved human figure—is found in Santo Domingo.

10. In point of technique, there is no higher type than the Macoris head among the antiquities of the two islands.

11. Superiority of observation is shown by the many Dominican specimens exhibiting a slight notching of the upper lip, also by the relative abundance of specimens showing the teeth.

12. More freedom in the carving of the limbs is seen in the sculpture from Santo Domingo. Departures from the three standardized positions of the body studied in the text of this paper occur oftener in Haiti, especially among its amulets and pestles.

13. The three unique Antillean forms—three-pointed idol, elbow-stones, and collar-stones—occur in both islands. The ideologically most advanced type of three-pointed idol (the third type of Fewkes) is found with greater frequency in Santo Domingo than in Porto Rico.

14. The elaboration of form in the pestles from Santo Domingo greatly surpasses that of the Porto Rican specimens.

²⁰ *Op. cit.*, planche 6, fig. 4; pl. 8, fig. 17.

CONCLUSIONS

1. The aboriginal Arawak cultures seen in the light of the carved stone remains seem to be almost identical in the three regions—eastern Cuba, Haiti, and Porto Rico.

2. There are evidences of differentiation in the arts in each of these.

3. The specialization and differentiation followed along the same lines in Porto Rico and Haiti. It was more divergent between these two islands and Jamaica than between them and Cuba.

CANÓVANAS,
PORTO RICO

CLAY FIGURINES MADE BY NAVAHO CHILDREN

By J. WALTER FEWKES

THE ethnologist is often impressed with the artistic ability shown by Indian children of our Southwest in modelling small images in clay, and sometimes it is noticed that the very young children, almost babies, make more artistic figures than older boys and girls. The author here calls attention to a few examples of juvenile modelling in clay based on a collection of figurines lately presented to the Bureau of American Ethnology by Dr. W. H. Spinks, of the U. S. Medical Service of the Bureau of Indian Affairs. The objects in this collection were said to have been made by a Navaho child four years old, on her own initiative and without aid from any one. As they are so cleverly done the author regards them as worthy of a short notice. The average white child of the same age certainly rarely equals them and I have thought them deserving of illustration before they were transmitted by the Bureau to the U. S. National Museum.

My informant tells me that Navaho children make them to play with, taking up a fragment of clay for amusement and working it with their fingers into the shapes desired. It will appear to one examining these figures that they represent different forms of animals or human beings. There are a few other objects—saddle, cup, and baby carriage—but what gives the animal forms especial interest is the fact that some of them have a very close likeness to the so-called fetishes that are frequently found in ruins in the Southwest and the question naturally arises whether there is any connection between them. Are they survivals reduced to playthings or are they anything more than simple toys?

The figures shown first (Fig. 81) represent domestic animals, mainly those with which the child has been associated during its short life. Among these may be seen the sheep, goat, horse, cat, dog. Next (Fig. 82) are found a number of represen-

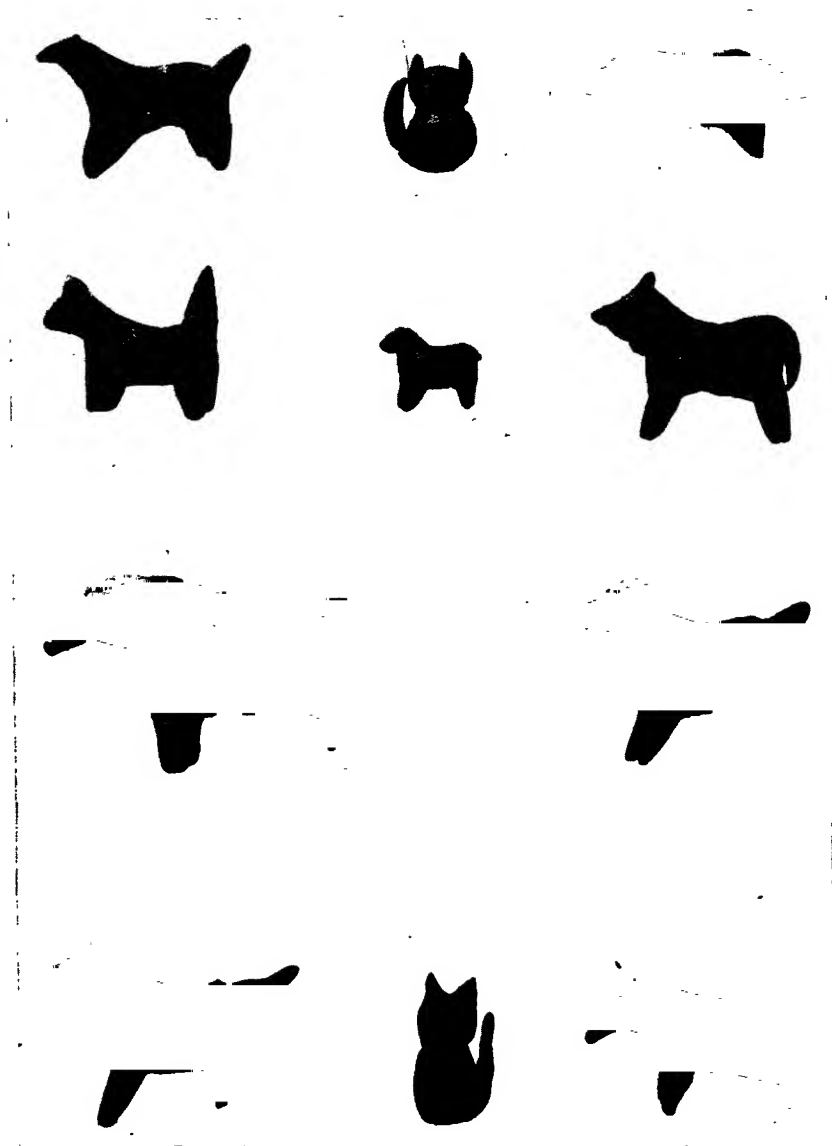


FIG. 81.—Playthings made of clay by a Navaho child five years old.



FIG. 82.—Playthings made of clay by a Navaho child five years old.

tations of human beings—men, women, and babies. There are one or two in the peculiar board cradles of the Navaho. The majority of the figurines apparently represent women. There is only one man, a shepherd. The female figures are represented as wearing necklaces and are sometimes adorned with feathers, disks and ornaments. None of the human figures appear to have eyes, nose or mouth represented, and feet are lacking in all the women, who are blanketed. One or two of the quadrupeds, apparently old goats or sheep, have representations of a bell tied around the neck. Fig. 83 shows a doll carriage.



FIG. 83.—Doll carriage made of clay by a Navaho child five years old.

It will be seen that the figurines in clay represent pretty clearly those animals or objects connected with the child's life. All but one of the adult human figures are of women. The size of some of the specimens is too small for the fingers of an adult; there is no evidence that any kind of tool was used in making them. These three illustrations (Figs. 81, 82, 83) are introduced in order to show the

skill of the little Navaho children in modelling in adobe the objects by which they are surrounded. There is likewise another, and perhaps more scientific, reason for introducing these figurines to professional archaeologists. On several trips to the Southwest the author has brought to light by excavation similar images in undoubted prehistoric mounds, and in the literature of the Southwest will be found statements of students regarding discoveries of figurines of the same character by others. These figurines are sometimes referred to as prehistoric fetishes.

In certain ceremonies, especially at the winter solstice, small figurines of a like character are made and used in Pueblo rites to deposit in shrines and elsewhere, the purpose being a prayer for the increase of the animals they represent; thus a small figurine of a sheep placed in a shrine in a sheep corral would

serve as an inducement to mother sheep to increase their young or as a prayer for more lambs. But even if this were the explanation of these images when used in ceremonies, it is not always adequate, for there is every reason to suppose that in prehistoric times they were sometimes made as playthings for the children, and it is worth while mentioning that prehistoric Pueblo children also sometimes made effigies of the kind. The author has no facts to prove or disprove the theory that the little children had been shown by their mothers how to make these figurines, or whether they did this of their own initiative.

SMITHSONIAN INSTITUTION,
WASHINGTON, D. C

CONSCIOUS EFFORT TOWARD PHYSICAL PERFECTION AMONG THE MAKAH INDIANS

BY FRANCES DENSMORE

A RECENT study of Makah music has yielded information on two interesting ideals of this tribe—a desire for physical beauty among the women and for physical strength among the men. These were developed consciously, by means which undoubtedly were based on experience. As a logical outcome of these ideals we find certain forms of dramatic action, and songs containing expressions of personal vanity and of admiration between the men and the women. Instances of the dramatic action were the dancing of individuals before seated assemblies, the acting out of the reasons for success or failure in catching whales, and the public appearance of persons in their “prayer costumes,” such as garments woven of wild rose bushes or nettles, or made of the skins of animals. The dramatic element is, however, apart from the purpose of the present article. The songs of admiration represent a phase of music which in the ten tribes previously studied has always been attributed to the influence of the white race. I have been told repeatedly that a tribe had no “love songs” in the old days, the sentiment or the passion of love having no place in the native music. In this instance, however, it was said to be native.

My first intimation of the “admiration song” among the Makah came one afternoon when about thirty Indians were assembled on the beach at Neah Bay, an isolated place near the end of Cape Flattery, in Washington. They had cooked some halibut and salmon by an open fire and were seated along three sides of a large square. In front of them were heavy planks on which they pounded with sticks as they sang, and on the planks, here and there, were packets of food, tied in cloth to be taken home. In the background was the heavy timber of a high point, ending in a glimpse of the Pacific Ocean. Nearer were two old boats drawn high on the beach and leaning lazily to one

side. The sand was warm and bright in the summer sun, and the tide was out. The dull blue garments of many of the Indians gave artistic bits of color. They were neatly dressed, with no attempt at gaudy ornamentation. I asked the meaning of a song and was told, "It says about a man, 'everybody is laughing at you because you are so wrinkled.'" Another song contained the words "I am trying to look as pretty as I can because my sweetheart is in the crowd. He is the reason for it." This was the song of a middle-aged woman who pointed to her husband as she sang it. She afterward told me that she received the song from her grandmother who "always sang it at parties." The tribe had many such songs, representing an established custom.

This opened an entirely new field of investigation, which was pursued side by side with inquiry concerning the customs of harpooning whales, and cutting off the head of the enemy instead of taking his scalp in the gentler manner of the Plains tribes. Before long I found that wrinkles really were considered a proper subject of ridicule, as an evidence of indifference or indolence on the part of either a man or a woman. Masculine vanity was mercilessly shown up in the following song of a man who danced with a mirror in his hand, looking in it with appropriate postures. The words of the song were

How high, how high my forehead is getting.
This is the first time I have looked in the glass.

Another song was said to be sung by a man after receiving food at a feast. The tribe had many of these "gratitude songs" which usually were the property of individuals. This man sang

With all the things that come of old age
I look like a sea parrot with white patches on the sides
of my head.
Try to grow old as quickly as possible,
I look so handsome.

Naturally I sought for the cause of this child-like vanity, its standards and the means of attaining them. My inquiry was met by ready statements and by the evidence of an intelligent system, which began at the birth of a child and was supposed to be continued with unremitting diligence during the entire life of

the individual. That even this diligence was not always rewarded is shown by the following song:

I will not, I will not have him,
Because he is too old.
His head and shoulders are good-looking
But I will not have him anyway,
Because he is too old.

The basis of the Makah system for attaining physical perfection was *massage*. As soon as a child was born, before it was bathed, its head, face, and body were carefully massaged. It was said, "some babies are born with pug noses and some with flat noses"; therefore, while the child's bones were soft, the shape of the nose was modelled, the ridge between the eyes receiving special attention. The cheeks were rubbed upward so that they would not sag, the eyes were rubbed outward "to take out puffiness," and the eyebrows were massaged "to get them in the proper place." The wrists and ankles were rubbed upward to secure slimness. The rubbing of the child's back did not begin until some time later when the back was rubbed by "passing the thumb from one vertebra to another," the motion always being upward. The massage was repeated three times a day, at morning, noon and night, when the child was taken from its cradle, this being continued until the child could creep. The first massage of a baby was with bare hands but the men and women rubbed their own bodies with cedar bark fiber or hemlock branches.

A young girl was given a sort of "powder puff" made of the inner bark fiber of young cedar trees, dried over the fire, twisted like a rope and pounded in that shape until it was very soft. She was taught to rub her face vigorously with this article, the motion being upward on the cheeks and across the forehead. The process was said to "take off the shine." A woman who was careful of her personal appearance massaged her face early every morning, bathed her body, and washed her hair. Almost all the women had long, heavy hair in the old days, the hair often being long enough to touch the ground. A favorite tonic for the hair was made of the tip ends of huckleberry sprouts, pounded and mixed with water. This was applied after the hair was dry.

The tip ends of fine hemlock branches were used by the women in face massage, a motion from the nose toward the ears being employed to prevent sagging muscles. Coarser branches were used in massaging the body, a rubbing from the waist upward being used to secure a firm figure.

At her maturity a young girl's eyebrows were plucked so as to make them a smooth, clear line, and any extra hairs at the edge of the hair-line were removed, medicine being applied so that the hairs would not grow again. For four years the girl was restricted in her diet, "mashed foods" being forbidden as having a tendency to make her corpulent, and she was often required to sit with her back against the wall so that she would be straight.

The men liked to be pointed out as exceedingly strong, and to that end they took frequent baths when the moon was waxing, after which they rubbed their bodies with herbs, or with bundles of hemlock branches coarser than those used by the women. At this time they prayed that their strength might be increased. They did not bathe during the waning moon.

Contests of strength formed a feature of a certain feast and the "hold" was by the hair. Each man seized his opponent by the hair on either side of the head and attempted to throw him to the ground. Therefore it was desirable that a man should have an abundance of hair. It was not unusual for a man's hair to hang below his waist. He arranged it in several folds on the top of his head and wound the rest of the hair around these folds. As a decoration he sometimes took the tips of pine branches and stuck them in his hair.

The men were classified according to strength as "good, better, and best," so that, when the enemy came, everyone knew upon whom they could depend for defense. It was required that each man should assist those in the class below him by "giving them pointers" from his experience as to the best means for increasing physical strength. Valuable information such as this was given at the Oil Potlatch, which was the occasion for unlimited generosity.

RED WING, MINN.

BOOK REVIEWS

METHODS AND PRINCIPLES

Early Civilization. An Introduction to Anthropology. ALEXANDER A. GOLDENWEISER. New York: Alfred A. Knopf, 1922. Pp. 428. (\$5.00 and \$3.00 editions.)

Early Civilization is to be welcomed and in fact has been welcomed as an excellent textbook in a science where educational tools have been far too scant. As textbook it is of the outlines type rather than what may be called the apprentice type in which, as, for example, in Lowie's *Primitive Society*, teacher and pupil work out or approach their problems together. In *Early Civilization* emphasis falls upon information, upon informing surveys of concrete data and of ethnologic theories, rather than upon incitement to research.

In Part I five diverse peoples are taken in illustration of primitive culture—Eskimo, Tlingit and Haida, Iroquois, Baganda, Arunta; in Part II there are topical descriptions in economy, art, religion and magic, and in topics of social organization. Ethnological theories are analyzed in Part III—the theories of Spencer, Frazer, Wundt, Durkheim, Lévy-Bruhl, and Freud; and appended is a bibliographic guide for which many students will be grateful.

The summaries are clear, and values are stated, on the whole, comprehensively and significantly. Such gaps as there are, as, for example, the omission of song and dance and myth from the discussion of art, or of war from the discussion of sex functions (more notable is the omission of discussion of war as a whole) are begged off in footnotes, and the author forestalls blanket criticism for the arbitrariness of his selection of data by stating that he is well aware that it is arbitrary and subjective, necessarily. He has selected the tribes he knows best, which means, Iroquois aside whom he knows at first hand, tribes about which there is considerable authentic description.

In compilation, there are bound to be mistakes of detail which seem flagrant only to the worker in the specific field. One could point out, for example, that, unless the Southwest is not to be considered a major area, the guardian spirit concept is not ubiquitous

in North America (pp. 192-193), nor, in view of the fact that among Pueblo Indians men have been the weavers of cotton and wool, and the handlers of all hide and feather processes, is it possible to say that throughout North America clothing has been in the hands of women (p. 259). Again it is misleading to suggest that any Pueblo woman may be a pot maker (p. 267), or that Zuñi clans are little more than a method of counting descent (p. 245). Pottery making is a specialized art in any pueblo, and there is no reason to suppose this has not always been so; and, a good authority notwithstanding, Zuñi clans count considerably in that ceremonial life which is so dominant in the general life of the tribe.

In such detail Dr. Goldenweiser is perhaps not greatly interested, nor even in its relation to more comprehensive discussion, and this lack of interest may account not only for minor errors but at times for a somewhat lumpy and undigested presentation. In the attempt to be thorough in form when he has not been so in interest, he has not resisted the temptation of letting the facts speak for themselves, in nuggets. On the other hand, in discussions of social theory and philosophy in which Dr. Goldenweiser is obviously interested, he is peculiarly happy and at home. His criticism is penetrating, his accounts of current methodology informative for the general reader and yet never written down, and his own contributions to a synthetic study of "early life and thought" and to the "nature of civilization" will be enjoyed by many, whether in accord or in controversy, or both.

For the reconstructionists, sometimes rather sillily referred to as the American School, what better summary than this: "The explanation of [cultural] individuality must be sought not in biological type, nor in physical environment, nor again in psychological traits or general historical or sociological conditions, but in the specific historic fates of each local culture in its particular geographical and historical setting." Or, for the "great man" loyalist, than this, *à propos* of cultural origins: ". . . the diffusion of civilization from tribe to tribe is but one of the basic factors in cultural advance, the other factor being human creativeness, resulting in the independent origination of new things and ideas." As another instance of philosophic seeing around, take the stand against evolutionist dogma:

"Progress is no more constant a characteristic of cultural change than is uniformity or gradual development. Progress must be regarded as but one

among several types of change characteristic of the historic process. The idea of progress, moreover, cannot be applied with equal success to all phases of civilization."

Here is a gage thrown down to all who with Wissler and Kroeber entertain a tenderness, if not for evolution, at least for progress. To find comfort for such emotion, however, the reader has but to turn the pages to the final consideration of why early man was conservative and uncritical in distinction to modern man, experimental and scientific.

ELSIE CLEWS PARSONS

AMERICA

El Grupo Linguístico Alakaluf. R. LEHMANN-NITSCHKE. (Revista del Museo de La Plata, xxv, pp. 15-69, 1919.) *El Grupo Lingüístico "Het."* R. LEHMANN-NITSCHKE. (*Ibid.*, xxvii, pp. 10-85, 1922.)

These monographs correlate with the author's earlier study of the Tshon linguistic group (same series, xxii, 1914), in which he had connected the languages of the Ona of Tierra del Fuego and of the Tsoneca or Tehuelche of Patagonia, reckoned as independent by Chamberlain and others. There is more review and interpretation of the literature on the Alakaluf and "Het" than examination of linguistic material. The treatise on Alakaluf brings together most of the extant material on that language, and thus supplements the similar compilation by Cooper in 1917. The author is less hesitant than Cooper about the status of the supposedly extinct and unknown Chono language and includes it in his Alakaluf group. It seems not entirely certain that Chono is forgotten, and an exploration for surviving speakers, as well as for individuals who may know the neighboring Atacaman, is urgently needed. A thorough field study of Alakaluf, on a sound phonetic basis and with accompanying texts, is also in order; as would be an intensive study of the culture. Father Koppers's recent expedition to the Yagan shows how much information can still be secured in this region by one who knows how and has the time. In passing, certain Alakaluf words, such as those for *eye, ear, tongue, hand, foot, blood, dog, father, one, eat* suggest to the reviewer the possibility of a remote relationship with Yagan, but until exacter materials are available, analysis would probably remain inconclusive.

In his "Het" paper, Dr. Lehmann-Nitsche distinguishes four groups of Pampas-Patagonian languages, which he designates after tribal suffixes as *-che*, *kunnu*, *kün'k*, and *-het*. The first three are the familiar Araucanian, Puelche, and Tsoneca-Ona; the last an extinct group on the Rio Colorado comprising part of the Diuihet and Chechehet of Falkner in 1774, and now constituted into an independent group or stock. The dozen "Het" words available are certainly different from those of the three other groups, but their range of meaning is unfortunate and they would seem to suffice only to indicate some probability of a separate family. The identity of the various tribes from Buenos Aires to the Strait is discussed in detail; the name Tehuel-het or Tehuel-che ("Southerners") is found to have been applied successively to bodies of all the stocks in question except the Araucanians.

Both monographs are scholarly, well documented, and valuable. With Indians still living within the same political boundaries as Buenos Aires and La Plata and Santiago, one cannot help hoping, however, that somewhat more attention may be diverted from what travelers said of the natives two centuries ago to the natives themselves, and that desk studies be supplemented by fuller inquiries in the field. The cost to a national budget would be infinitesimal, and the future would appreciate.

A. L. KROEBER

El Llamado "Calendario Azteca." Descripción e Interpretación del Cuauhxicalli de la "Casa de las Águilas." HERMANN BEYER, Professor of Mexican Archaeology in the National University of Mexico. Mexico: Verband Deutscher Reichsangehöriger, 1921. Pp. vii, 126, 1 pl., 250 figs.

Beyer's interpretative study of this the most celebrated of ancient Mexican sculptured stones is dedicated to the people of Mexico (by the German Colony). In the preface, the author rightly speaks with pride of the contributions by German savants to our knowledge of Mexican archaeology.

As terms of comparison, Beyer has made telling use not only of other sculptured stones in the same general class but also of the Mexican codices. The principal sculptured stones that admit of comparison with the "Calendario Azteca" are the sacrificial stones (or bowls), called *quauhxicalli*; the stone of the four prehistoric suns in the City of Mexico; the "calendar stone" of Alexander von

Humboldt; and that belonging to the Peabody Museum of Yale University, recently described by the reviewer in this Journal, XII, 481-496, 1910.

The best known of the sacrificial stones, generally recognized as such, are the two quauhxicalli in the Mexican National Museum, one in Cuernavaca, one in Vienna, and one in the British Museum. The "Calendario Azteca" is the only one of all these which has the twenty day-signs; hence the name by which it has been so widely known. Although the Yale specimen does not have the day-signs, it does have many other points in common with the great stone in Mexico City, including the four prehistoric suns: Ocelotonatiuh, Eecatonatiuh, Quiauh-tonatiuh, and Atonatiuh; it therefore serves as a link connecting the quauhxicalli with the "Calendario Azteca." In fact the author places them both in the same class with the quauhxicalli. He believes the chief use of the "Calendario Azteca" was in connection with the festival of *naui olin* (four movement). His opinion is based largely on two features: (1) the monolith had been painted; (2) the eight holes surrounding the cylinder. These holes are supposed to have held poles, which formed a framework to support a ceiling, the latter removed when the victim directed his message to the sun. His conclusion seems to be justified by the array of evidence. A similar conclusion was reached by the reviewer (see paper cited above) in respect to the Yale specimen, which he said "might well have been associated with human sacrifices to the sun"—hence a quauhxicalli in the general acceptance of the term.

Not the least attractive features of Professor Beyer's booklet are the numerous excellent illustrations and the long list of citations and annotations.

GEORGE GRANT MACCURDY

ASIA

The Andaman Islanders. A Study in Social Anthropology. (Anthony Wilkin Studentship Research, 1906.) A. R. BROWN. Cambridge: University Press, 1922. xiv, 504 pp., 20 pls., 2 maps, 46 figs.

Professor Brown spent approximately two years in the Andaman Islands—owing to linguistic difficulties not, as he had hoped, among the hardly known aborigines of Little Andaman, but mainly in Great Andaman, though for the most part in the northern sections left untouched by Mr. Man. We are accustomed to think of the Anda-

manese as a homogeneous group, but Professor Brown's account impresses us with their diversity not, to be sure, in point of race but as regards both language and culture. The basic division into Little and Great Andamanese corresponds with a linguistic differentiation so great that lexical coincidences are rare, while the really fundamental unity of grammar is only brought out by intensive analysis (p. 11). The former group has an outpost in Rutland Island and South Andaman, viz. the Jarawa, who are allied to the Little Andamanese in technology as well as speech (p. 13). But even the Great Andamanese present appreciable variations: the author recognizes a Northern and a Southern group embracing, respectively, four and six tribes, with certain local cultural differences.

While Professor Brown was mainly interested in the sociology and religion of the natives, he appends a useful and suggestive summary of their technology, with comparative references to other Negrito tribes (pp. 407-494), concluding with a reconstruction of the probable proto-Negrito culture. From this the author plausibly eliminates pottery and the outrigger canoe, both of which he contends were probably learnt by the ancestral Andamanese before reaching their historic habitat. He believes that the archaic Negrito technology may not have included stone work at all but only utilization of wood, bone, and shell. It is interesting to note that he confirms the ignorance of fire-making previously imputed to the Andamanese (p. 472), who also lacked dogs (pp. 36, 417).

Presumably Professor Brown felt that the data on non-material aspects of Semang and Philippine Negrito culture were too meagre to warrant a corresponding list of parallels. Nevertheless, a few interesting points of resemblance with the Semang might have been mentioned, such as tree-burial, the prophylactic use of the fire-brand (p. 139; cf. Skeat and Blagden, *Pagan Races of the Malay Peninsula*, II, 213), the relation of the cicada to the chief deity (pp. 150, 198; *op. cit.*, II, 210).

It is of course impossible to give an adequate summary of the descriptive data here presented, hence I will confine my attention largely to two matters of theoretic import—social organization and "high-god" beliefs.

The author fully corroborates Mr. Man's report as to the lack of a sib (clan) system: there are merely local groups and families (p. 23). A curious analogy to the Crow-Hidatsa method of nicknaming a person for the deeds or traits of his paternal uncle is seen in the

Andaman custom of so naming a man after his maternal uncle (p. 49). As for marriage, monogamy is universal, though preceded by pre-matrimonial license (p. 70). The nomenclature of relationship (pp. 53-69) is rightly stated to be fundamentally different from the systems of other uncivilized peoples. Terms of address exist but do *not* imply kinship; and it is quite common to dispense with them and use personal names instead. Of the Iroquois-Dakota type of classificatory system there is assuredly no trace here, but there are suggestions of the Hawaiian type insofar as differences of seniority come to the foreground. Thus *maia* "is used by any man or woman in speaking to a man older than himself or herself without implying any relation between them beyond that of respective age," and *mimi* is applied in corresponding fashion to women. But combined with possessive particles these terms "are only used when it is necessary to refer to the actual father or mother of anybody." In other words, vocatively, the terms denote only social status; non-vocatively, actual parental kinship. The use of analyzable terms such as "he who was born before me" and "he who caused me to be conceived" is also a noteworthy phenomenon. Whether the generational classification should be linked with that of Polynesia, seems a problem worthy of further study.

In the highly important treatment of religion a number of serious deviations from Mr. Man's account appear. Some of these may be merely due to the lack of standardized belief or to local variations, but regarding both the picture of the hereafter and of the high-god Professor Brown's account is certainly more convincing. In the first place, my own experience with natives much higher in general culture than the Andamanese but like them without an order of priests suggests the probability of very considerable variations in individual conception like those actually found by Professor Brown and strengthens his suspicion that Mr. Man has in perfect good faith attempted to combine into a consistent whole a series of discordant statements by aboriginal witnesses. Secondly, it would certainly be curious if another generation of white contact had had the effect of making native belief *lose* points of similarity formerly obtaining between their own and Christian conceptions, such as the ethical character of Puluga (= Biliku). Even were we to assume that such views obtained sporadically in Man's day, they could not be taken as the standard tribal ones then any more than now. Furthermore, it is surely logical to attach the greatest importance to those

features universally held in spite of all disagreement on other issues. These reduce to two: the Andamanese all regard Puluga (Biliku) and his (her) counterpart Deria, Daria or Tarai as the Northeast monsoon and Southwest monsoon, respectively; and they believe that the transgression of certain taboos will infuriate the former to the point of sending stormy weather (p. 162). This latter reaction of course is not in harmony with the idea of a moral law-giver who deals out retribution for good and evil deeds since the offenses in question are of a purely ritualistic nature. On the other hand, the identification of Puluga with a wind gives this figure a naturalistic aspect hardly compatible with the "Supreme Being" sketched by Mr. Man.

Nevertheless, it is by no means necessary wholly to abandon the view that Puluga somehow represents a high-god provided we are content to qualify our own idea of such a being. For he (or she) is often mentioned as a creator of sun and moon, the discoverer of fire, the inventor of netting and basketry (p. 198), in short, corresponds to Archbishop Söderblom's notion of the *Urheber*.

After presenting his data, Professor Brown devotes considerable space to an interpretation of them. Whether he was wise in segregating explanatory from descriptive matter, is a question of taste, but most readers will concede that his method supplies a good way of reviewing the data. The brief prefatory remarks in this section are bound to challenge discussion; not everyone will assent to the proposition that historical reconstruction must be confined to the field of linguistic and material culture, or will accept the view that the sole purpose of scientific studies is to discover general laws. After all, books have been written on the subject of the historian's as opposed to the physicist's attitude towards reality, and the matter cannot be dismissed in a footnote. However, we shall all heartily sympathize with the author's attempt to explain the parts of Andamanese culture not as isolated fragments but as parts of an organic unity.

While space limitations make further discussion impossible, enough has been said to show the very great value of Professor Brown's book. He has had the good fortune of enjoying field experience among two other quite diverse groups, the Australians and the South Africans, and those who are acquainted with his Australian papers will eagerly look forward to comparative studies based on this varied experience.

ROBERT H. LOWIE

OCEANIA

Hawaiian Legends. WILLIAM HYDE RICE. (Bernice P. Bishop Museum Bulletin 3). Honolulu, Hawaii, 1923. 137 pp.

Mr. William Hyde Rice's collection of *Hawaiian Legends* is all that could be asked for in the way of a fine series of tales. The stories bear the earmarks of careful recording and translating. As is stated in the preface the author "has tried to make his version as literal as possible, preserving at the same time the spirit of the original Hawaiian, its flavor, rhythm, and phrasing." The author was born in Honolulu in 1846 and has lived his life among the people whose legends he records.

A feature that enhances the value of Mr. Rice's collection is the attribution of the legends to various islands, principally to Kauai, which has long been Mr. Rice's home. The localization is minutely detailed and many of the geographic features whose legendary origin is described have been personally inspected by the author. This careful recording of the source of each tale makes the stories invaluable for comparison with similar compilations from other islands of the Hawaiian group. When the extant materials are assembled such comparison will doubtless afford something of a gauge as to the degree of local differentiation within the archipelago. Moreover, Mr. Rice's tales are rich in details of Hawaiian culture.

The subject matter of the tales fully justifies the title "legends" rather than "myths." There is nothing in the tales that rises to the majesty of cosmogonic myths. There is much of the supernatural to be sure and the gods are constantly taking a hand in the affairs of mortals; yet on the whole the deeds done do not affect mankind as a whole. The islands in every tale are conceived of as already existent.

The entire set of tales have a typically Polynesian flavor and might well pass for those of many another Polynesian people were it not for the distinctive localizations. Naturally, too, a number of unique Hawaiian concepts appear. Among these stands out prominently the tale of Pele, the volcano goddess. Among more widely diffused motives is that of the island of the gods which is hidden from mortal sight, a concept which recalls the analogous island of Puluotu of the Tongans.

In two tales at least, European influence seems apparent. The first of these tales is that of the Menehune, the pygmy race which is supposed to have inhabited the land anciently, then to have migrated.

In this tale the land is described as being continuous from Hawaii to New Zealand. In the tale of Makuakaumana, the gates of heaven and the beatified inhabitants thereof are mentioned. A "Jonah-and-whale" episode, also in the Makuakaumana story, is perhaps likewise of Biblical origin.

E. W. GIFFORD

SOME NEW PUBLICATIONS

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Arsandoux H. et Rivet P. Nouvelle note sur la métallurgie Mexicaine. (L'Anthropologie, 1923, 63-85.)

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Brigham, Carl C. A Study of American Intelligence. Princeton: Princeton University Press, 1923. xxv, 210 pp.

Bushnell, Jr., David I. Villages of the Algonquian, Siouan, and Caddoan Tribes west of the Mississippi. (Bulletin 77, Bureau of American Ethnology. Washington, 1922.) x, 211 pp., 55 pls., 12 figs.

Christian, V. Vor- und frühgeschichtliche Völkerwanderungen im vorderen Orient. (Anthropos, xvi-xvii, 1921-1922, Juli-Dez., 577-587.)

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Gusinde, P. M. Vierte Reise zum Feuerlandstamm der Yagan. (Anthropos, xvi-xvii, 1921-1922, 966-977.)

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MacCurdy, George Grant. Human Skeletal Remains from the Highlands of Peru. (American Journal of Physical Anthropology, 1923, vi, 218-329, 49 pls., 1 plan.)

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Perry, W. J. *The Children of the Sun; a Study in the Early-History of Civilization*. New York: Dutton, 1923. xv, 551 pp., 16 maps.

Pope, Saxton T. *A Study of Bow and Arrows*. (Univ. of Cal. Publications in American Archaeology and Ethnology, vol. 13, no. 9, pp. 329-414, pls. 45-64.) Berkeley, 1923.

Rivet, P. *et* Testevin, P. C. *Les langues du Purús, du Jura et des régions limitrophes*. (Anthropos, xvi-xvii, 1921-1922, 819-828.)

Roth, H. Ling. *American Quillwork: a Possible Clue to its Origin*. (Man, August, 1923, p. 113 seq.)

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———. *Die Abwendung vom Evolutionismus und die Hinwendung zum Historizismus in der Amerikanistik*. (Anthropos, xvi-xvii, 1921-1922, pp. 487-519.)

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Thurnwald, R. *Die Gestaltung der Wirtschaftsentwicklung aus ihren Anfängen heraus*. (Sonderabdruck aus dem Sammelwerk: Erinnerungsgabe für Max Weber: Die Hauptprobleme der Soziologie, 1923, pp. 272-333.)

———. *Die Krisis in der Ethnologie. Zur Entwicklungs- und Kulturkreislehre*. (Kölner Vierteljahrshefte, iii, 1923 (?), 34-41.)

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Young, Kimball. Review of Carl C. Brigham, *A Study of American Intelligence*. (Science, lvii, 1923, pp. 666-670.)

DISCUSSION AND CORRESPONDENCE

A NEW ANTHROPOLOGICAL JOURNAL IN PERU

THERE has long been a great need in Peru for a Journal devoted chiefly, if not exclusively, to anthropological and archaeological studies. That need seems now to have been filled, for a new periodical, entitled *Inca*, has begun its career, under the editorship of Peru's leading anthropologist, Dr. Julio C. Tello.

As the first number of *Inca*, that for January-March, 1923, is intrinsically of great importance, we may fairly assume that the new journal will become one of the chief pieces in the armory of students who study Andean archaeology. *Inca* is a quarterly, and if it continues as admirably as it has begun, we shall all wish it long life. Its editor is peculiarly well placed for making this journal one of the first importance: he is director of the two best archaeological collections in Peru, those of the Universidad Mayor de San Marcos and of Don Victor Larco-Herrera. The latter is probably the finest Peruvian collection in the world; the University collection, though smaller, is still of very great importance. To Dr. Tello, as well as to the generosity and intelligence of the late Dr. Javier Prado y Ugarteche and of Don Victor Larco, is due the creation of those two splendid museums. *Inca* is to be the organ of the University Archaeological Museum of Lima.

The first number of *Inca* is excellently printed on good paper of octavo format. The proof-reading is admirable, not one misprint having been detected by me in my careful reading. Furthermore, the plates, including the excellent and important colored frontispiece, are properly printed on an appropriate special paper; in many South American journals both text and illustrations are stamped out on what appears to be blotting paper or at best newsprint paper.

The contents of this first number may be briefly described as follows:

"Prefacio," by Dr. Manuel V. Villarán, Rector of the University of San Marcos. (Pages i-vi.) It is explained that the aim of the Journal is entirely scientific, but that *Inca* will avoid arid erudition which would make it impossible for the Journal to serve the practical purpose of making the Indian problem in Peru understood by all kinds of people

"Las Ruinas de la Provincia de Canta." by Pedro E. Villar Córdova, (pages 1-23), describes the ruins in a little-known part of Peru. It is well illustrated by drawings and photographs and a map. It is much to be hoped that Señor Villar will often write for *Inca*. His Fig. 5 is of interest as showing a type of stone roofing somewhat like the Maya vaulting, and Fig. 6 shows a built-in stove found in one of the ruined edifices visited by Señor Villar.

"Mitología Andina," edited by Dr. Carlos A. Romero, (pages 25-78), is the first printing of an important document by the Licentiate Rodrigo Hernández Príncipe, who wrote at Recuay in January, 1622, at a time when the Archbishop of Lima, Lobo-Guerrero, was doing his utmost to stamp out idolatry in Peru, and was unconsciously providing us with our chief authorities on that subject, as Arriaga and now Hernandez Príncipe. The document proper is followed by others not less important and by Dr. Romero's luminous commentary upon them.

"Tampu," by Luis E. Valcárcel, (pages 79-82), is a presentation of a new and interesting, but debatable, theory as to the meaning of the word "Tampu."

"Tincunakuspa," by Carlos A. Romero, (pages 83-91), is a contribution to our knowledge of marriage customs among the pre-Conquest Peruvians.

"Wira Kocha," by Julio C. Tello, (pages 93-320), is an extremely important study of Peruvian folklore and religion. That its subject-matter is highly controversial only adds to the interest of the article. The orthography employed in the proper names is that curious neo-Quechua plus Teutonic spelling which is used by Uhle and latterly by Tello and other Peruvian writers. For English and American and Spanish writers it has few allurements, as the "classical" Spanish spelling of proper names is satisfactory. Aside from this minor point, the article of Tello on Viracocha is an admirable piece of work.

For the convenience of fellow students of Andean archaeology, I may observe that the subscription to *Inca* for countries other than Peru is Soles 14.00 per year (less than \$7.00). The address of the editor is: Universidad Mayor de San Marcos, Museo de Arqueología, Lima, Peru, S. America.

PHILIP AINSWORTH MEANS

THE HAWAIIAN "HOOPAPA"

In my paper on Hawaiian riddling in the *Anthropologist* for July-Sept., 1922, I used the words *hoopaapaa* and *hoopapa* interchangeably for the art of riddling, following the usage of the Hawaiian translator of the Fornander manuscript. Mrs. Mary Pukui calls my attention to the fact that *hoopapa* is really the proper word in this sense, *hoopaapaa* implying an angry or contentious dispute. *Pa* means "to touch" and the meaning is, according to Mrs. Pukui, "to touch and see what the other fellow knows."

I am also in error in ascribing Mrs. Pukui's family to Puna district instead of to the neighboring Kau district on Hawaii. The

distinction is more important than it seems geographically because in old times each district was under a different ruling chief and had its own tradition and associations.

A few errata are to be noted in the Hawaiian text of the riddles:

- Riddle 1, *kani* for *kau*
10, *mohala* for *moholo*
18, *kau* for *hau*
23, *nuku* for *muku*
24, *kua* for *hua*
29, *kaʔeku* for *kaʔehu*
33, *huki* for *huhi*
49, *wahi* for *uahi*
Page 325, line 26, *kahuli* for *kuhuli*.

MARTHA W. BECKWITH

BRIEF COMMUNICATIONS

SOME PHASES OF ARMENIAN SOCIAL LIFE

THE following information was obtained in the summer of 1919 from Armenians in Fresno, California. Since the facts offered have an intimate anthropological bearing, and are not available in any of the published accounts of Armenians or of Armenia with which I am acquainted, I submit them here.

Marriage Regulations. The restriction found in the Anglican Church and until recently the law of England, that a man may not marry his deceased wife's sister, an inheritance from the Mosaic code, prevails in Armenia. A man may not marry the sister of his brother's wife, a restriction found also in the Greek Orthodox Church, nor may one marry a blood relative who bears the same name, however remote the relationship. Marriage is not permitted to one related on the father's side unless the relationship is seven degrees removed (counting to the common ancestor and down to the one to whom relationship is traced); nor to one related on the mother's side unless the relationship is six times removed. Similarly, in the early Roman Church marriage to one related within seven degrees was not permitted. The source of the restriction may be Persia or India, since the Grhyasutras and the Dharmasutras proscribe marriage within five degrees on the mother's and within seven on the father's side. The laws of Manu declared the relationship must not be closer than that of a common ancestor six generations removed.

Usually the bride goes to live with the family of the husband, though sometimes the husband goes to live with the wife's father. There is no courtship, the marriage being arranged by the parents of the boy and the parents of the girl. Usually it takes place at an early age. It is the custom for the wife not to speak to the relatives of her husband. The taboo is most stringent with regard to her mother-in-law, only less heavy penalties being attached to breaking the taboo forbidding her to speak to her father-in-law. At least these restrictions are observed by the bride when she goes to live among the husband's people, although they may not apply when his relatives come to visit in her home. After she has been married for

some time the taboo weakens and she begins by addressing the younger relatives of the husband. After the birth of children she converses with the older relatives of the husband, and ultimately with all his relatives. So completely does the restriction break down in later marital life that the wife when the mother of a large family may become the most influential member of the husband's family circle. So completely do the facts fit into Tylor's hypothesis that they seem made for it by a sort of *ex post facto* conviction that ethnology must confirm the theories by making the facts fit them.

Kinship Terms. The following are some of the kinship terms. I employ the orthography which has been adopted by the Armenians in transposing Armenian words into English.

Haire, father.

Maire, mother. (Sometimes *mes*, probably as a term of endearment.)

Medzhair, grandfather. (*medz*, big.)

Medzmair, grandmother. More accurately "father's mother."

Kermair, Mother's mother. (*ker*, better.) The distinction between *kermair* and *medzmair* is becoming obsolete, the latter being generally used to denote either grandmother.

Hav, great-grandfather; sometimes, grandfather.

Hanin, great-grandmother.

Zavag, son or daughter.

Duga, son, boy.

Dvostor, daughter.¹

Tor, grandson, granddaughter.

Yekbair, brother.

Koor, sister.

Moryekbayr, or *Keree*, mother's brother. Sometimes used of those who are not related but stand to the speaker in a position of patronage or protection. Thus the Russian Government was called *Keree*.

Horyekbayr, father's brother.

Gessrire, husband's brother.

Aner, wife's father.

Gesoor, husband's mother.

Zonkatch, wife's mother.

Morakoor, mother's sister. Sometimes applied to one of no relationship.

Horakoor, father's sister.

Dakra, husband's brother.

Keraire, sister's husband. (Literally, "sister's man.")

Anertzack, wife's brother.

Dal, husband's sister.

¹ Perhaps the Sanskrit *duhitra*, "daughter," (from *du*, "distant," and *hit*, "good"), indicates patrilocal practice, assuming that it connotes "daughter-in-law" as well as "daughter."

Kenee, wife's sister.

Pesa, son-in-law; bridegroom. Applies to the bridegroom of any female relative who is of the speaker's age grade or younger. A term of address reciprocal between the husbands of two sisters.

Harse, daughter-in-law; bride; occasionally, wife. It is applied to the wife of any relative of the speaker's age grade, or younger.

Naire, a reciprocal term used by the wives of two brothers.

Prior to marriage a girl is called *akchig*, a boy *mauch*.

How like this is to the prevailing Indo-Germanic scheme will be found by referring to similar distinctions pointed out by the writer in an article in the *Anthropologist* in 1918, entitled "Indo-germanic Relationship Terms as Historical Evidence." Though the maternal-paternal distinction runs throughout the system it is becoming obsolete, as occurred in Greek, Latin, and German—perhaps for a similar reason.

Inheritance. Upon the death of a man his property was disposed of in the following manner. One-seventh was given to the wife, one-eighth of the remainder to the mother. The residue was divided into three equal portions, two portions of which went to the sons, the remaining portion to the daughters. If there were no daughters their portion went to the male line, but in the absence of a son the daughters inherited nothing, the entire portion going to the male line. In this event, however, usually some property was "given" to the daughter. If there is no son to inherit, the two portions of the property go, first to the deceased's brother, then to the brother's son, next to the deceased's father's brother (oldest?), and next to the father's brother's son (oldest?).

If there are no descendants in the male line the property is disposed of in this order: to daughter's son, sister's son, deceased's father's son, whether full or half brother. Thus if there be no daughter the property may descend through the female line but only to males, though if there be no son a daughter may not inherit.

WILSON D. WALLIS

ANTHROPOLOGICAL NOTES

WILLIAM E. MYER

ARCHAEOLOGY has suffered a severe blow in the sudden death on December 2 of Mr. William E. Myer, who has been associated with the Bureau of American Ethnology during the past four years. Mr. Myer was a successful business man of Carthage, Tenn., identified for many years with various betterment projects of his community and state and during the World War incumbent of the important post of state fuel administrator. After withdrawing from active business life he devoted his attention with enthusiasm and success to recording and exploring the antiquities of his native commonwealth. The subject of aboriginal trails was one which he made peculiarly his own, bringing out possibilities in connection with them unsuspected by ethnological students of long standing. He not only compiled a very complete trail map of Tennessee but carried the work over a great portion of the Southeastern United States. A large part of this work together with a quantity of material bearing on the archaeological remains of the section has fortunately been left in a condition in which it may be of permanent use. Mr. Myer was not merely a valued worker in these fields but possessed an unusually engaging and sympathetic personality which endeared him to all fortunate enough to enjoy his acquaintance.

THE TWENTY-FIRST INTERNATIONAL CONGRESS OF AMERICANISTS

THE following notice is repeated from the issue of *Science* for November 9, 1923:

In accordance with the resolution adopted by the Twentieth International Congress of Americanists held at Rio de Janeiro in 1922, the Twenty-first Congress will be held at The Hague and at Gothenburg.

Arrangements have been made for holding the first part of this congress in the Netherlands at The Hague from Tuesday, August 12, to Saturday, August 16, 1924, the second part to be held in Sweden at Gothenburg from Wednesday, August 20, to Monday, August 25.

The Hague session will deal with subjects of general nature, North America, the Antilles and Guiana. In Gothenburg papers will be read on

subjects of general nature, South America, Central America and the Eskimo.

Care will be taken to provide a means of conveyance from The Hague to Gothenburg at a reasonable charge. Side trips will probably be arranged to Stockholm, Christiania and Copenhagen; and following the session anthropological congresses of importance will be held in Prague. It is very desirable that titles and abstracts of communications be received both for The Hague and for Gothenburg at an early date so that the detailed program may be prepared as soon as possible.

Communications may be oral or written. The time allotted for the reading of papers is fifteen minutes; but exceptions may be made in the case of subjects of especial interest and importance. The acceptance of more than two communications by one author will be subject to decision by the council. For discussion of papers the time limit will be five minutes for each speaker. All papers presented at the session will be submitted, after the conclusion of the Congress, to the committee of publication, and if approved will be printed, with a limited number of illustrations if necessary, in the proceedings of the Congress.

The addresses of the Secretaries General of the two sessions are: Dr. D. Albers, Van Oldenbarneveltlaan 61, The Hague, Netherlands, and Dr. Erland Nordenskiöld, The Museum, Gothenburg, Sweden. Subscriptions (10 Dutch guilders and 15 Swedish crowns) may be sent either to the secretaries, or to Dr. Aleš Hrdlička, U. S. National Museum, Washington, D. C.

A. I. HALLOWELL, recently appointed Instructor in Anthropology at the University of Pennsylvania, gave a course of lectures under the title "Anthropology and Social Work" during the Fall Term of the Pennsylvania School of Social and Health Work. The purpose of the course was to acquaint social workers and others in allied professions with anthropological data which would serve as a basis of approach to the contemporary social problems with which they are confronted.

MR. PAUL HENNING, a German explorer well known to Mexicanists, at one time connected with the National Museum of Mexico and also with the Dirección de Antropología, died very suddenly in Oaxaca, in the month of October. His activities were principally directed to the collection of anthropological material but he contributed a number of articles on archaeological and ethnographical questions to the *Annales* of the Sociedad Científica "Antonio Alzate" and to those of the Mexican National Museum. He was intimately acquainted with the manners and customs of most of the aboriginal tribes of the interior of Mexico.

MISS ADELA C. BRETON, for many years a devoted student of ancient American culture and a member of the American Anthropological Association, died June 15, 1923, at the age of seventy-three.

DR. J. WALTER FEWKES, Chief of the Bureau of American Ethnology, spent considerable time during the month of November in reconnaissance work along the west coast of Florida as the guest of Mr. E. M. Elliott of St. Petersburg, Florida. Work of excavation was begun on one of the principal mounds near the latter place and was continued into January by Mr. M. W. Stirling, of the U. S. National Museum.

MR. NEIL M. JUDD, Curator of American Archaeology in the U. S. National Museum, returned to Washington early in December after seven months' exploration in New Mexico and Utah for the National Geographic Society.

DR. FAY-COOPER COLE, Assistant Professor of Anthropology in Northwestern University and Curator in the Field Museum of Natural History, has been appointed to give instruction in the department of sociology and anthropology at the University of Chicago.—*Science*.

LAUGE KOCH, the Danish Arctic explorer, who contributed some interesting ethnographical notes on northern Greenland to the Oct.-Dec. 1922 number of this journal through Mr. Austin H. Clark, returned home in September from an expedition to Greenland begun in March, 1921.

DR. TRUMAN MICHELSON of the Bureau of American Ethnology returned to Washington September 22 from field work divided between the Labrador Peninsula and the Fox Indians of Iowa. He measured some Montagnais Indians and Eskimo in the former region and also had an opportunity to take measurements of some Beothuk skulls at St. Johns, Newfoundland. The most important fact elicited with reference to the ethnology of Labrador was that the Nascapi language is merely a dialect of Montagnais. Reports of a people in northwestern Labrador speaking a language unintelligible to the Nascapi and apparently distinct from Eskimo may prove of future importance.

MR. JOHN L. BAER of the Division of Physical Anthropology, U. S. National Museum, is representing the Museum on an expedition to eastern Panama conducted by R. O. Marsh, an expedition expected to consume six months.

DR. ALEŠ HRDLIČKA, Curator of the Division of Physical Anthropology of the U. S. National Museum, gave an address before the Washington Academy of Sciences on October 19 on "Ancient Man in Europe."

MR. S. K. LOTHROP has gone to the Republic of San Salvador to engage in anthropological work for the Museum of the American Indian, New York City.

PROF. GEORGE GRANT MACCURDY was the speaker at the meeting of the Galton Society, held on December 5, 1923 at the American Museum of Natural History, New York, his subject being "Nature as reflected in Paleolithic Art."

THE ILLINOIS STATE LEGISLATURE has appropriated \$50,000 for the purchase of the site of the Cahokia group of mounds at East St. Louis.

THE INTERNATIONAL EUGENICS COMMISSION met at Lund, Sweden, September 1-3, 1923.

INFORMATION DESIRED. Five years ago there were on exhibition in the Louisiana State Museum at New Orleans four fine image pipes from Vicksburg, Miss., the property of Mr. Charles Muller. Any one having knowledge of the present whereabouts of these pipes will confer a favor by communicating with Dr. Calvin S. Brown, University, Miss.

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